ED 020 975 UD 005 684

A DEMONSTRATION STUDY TO DETERMINE THE EFFECT ON ACADEMIC PERFORMANCE OF GIVING HIGH SCHOOL TEACHERS BACKGROUND INFORMATION ON HIGH-POTENTIAL LOW-ACHIEVING STUDENTS.

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EDRS PRICE MF-$1.25 HC-$10.80 268P.

DESCRIPTORS- *ACADEMIC PERFORMANCE, *UNDERACHIEVERS, *SELF CONCEPT, *TEACHER RESPONSE, *TEACHER INFLUENCE, ACADEMIC ACHIEVEMENT, EDUCATIONAL RESEARCH, EXPERIMENTAL GROUPS, CONTROL GROUPS, STUDENT ADJUSTMENT, STUDENT CHARACTERISTICS, STATISTICAL DATA, STUDENT ATTITUDES, GRADE POINT AVERAGE, STANDARDIZED TESTS, QUESTIONNAIRES, DETROIT, MICHIGAN, BILLS INDEX OF ADJUSTMENT AND VALUES, SEQUENTIAL TESTS OF EDUCATIONAL PROGRESS, SCHOOL AND COLLEGE ABILITY TEST

INFORMATION ON THE BACKGROUND AND ATTITUDES OF AN EXPERIMENTAL GROUP OF 191 HIGH-POTENTIAL, LOW-ACHIEVING 10TH-GRADE STUDENTS WAS SUPPLIED TO THEIR TEACHERS TO DETERMINE THE EFFECT OF THIS INFORMATION ON THE STUDENTS' PERFORMANCE. TEACHERS OF STUDENTS (114) IN A QUASI-CONTROL GROUP WERE INFORMED THAT THEIR PUPILS HAD TESTED AS UNDERACHIEVERS, BUT NO SPECIFIC DATA ABOUT THE STUDENTS WAS SUPPLIED TO THEM. UNDERACHIEVERS (191) IN A TRUE CONTROL GROUP WERE NOT IDENTIFIED TO THEIR TEACHERS. AN ACHIEVEMENT BATTERY, A SELF-CONCEPT INDEX, AND GRADE POINT AVERAGES WERE USED TO MEASURE THE EFFECT OF THE TEACHERS' KNOWLEDGE UPON PUPIL PERFORMANCE AFTER FIVE SEMESTERS. DATA WAS MADE AVAILABLE ON THE BACKGROUND AND ATTITUDES OF AVERAGE- AND HIGH-ACHIEVING STUDENTS SO THAT THE UNDERACHIEVERS MIGHT BE COMPARED WITH THEM. THE HYPOTHESIS THAT THE EXPERIMENTALS WOULD IMPROVE OVER THE CONTROLS IN ACADEMIC PERFORMANCE AND IN SELF-ATTITUDES WAS NOT CONFIRMED. (LB)

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A DEMONSTRATION STUDY TO DETERMINE THE EFFECT ON ACADEMIC PERFORMANCE OF GIVING HIGH SCHOOL TEACHERS BACKGROUND INFORMATION ON HIGH-POTENTIAL LOW-ACHIEVING STUDENTS

Conducted by

THE GUIDANCE AND COUNSELING DEPARTMENT
OF THE DETROIT PUBLIC SCHOOLS

under contract with

THE DEPARTMENT OF PUBLIC INSTRUCTION
OF THE STATE OF MICHIGAN

as authorized by

THE NATIONAL DEFENSE EDUCATION ACT OF 1958
(Sec. 143.26) (P.L. 85-864)

UD 005 684

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CHAPTER I

INTRODUCTION

I. STATEMENT OF THE PROBLEM

Educators have long been concerned with the student who has the capacity for good scholastic work, but who fails to perform satisfactorily in school. Interest in the underachiever, as this kind of student has come to be termed, has increased in recent years, stimulated especially by the launching of the Soviet Sputnik in 1957.

At that event, a considerable cry arose that higher performance in America's schools was a national necessity. So widespread was this feeling that in 1960 the editor of a volume called *Working with Superior Students* could write:

> The plain fact seems to be that the attitude of an influential segment of the American public toward the importance of academic achievement has changed considerably in the last few years and is moving rapidly toward the recognition that *outstanding intellectual ability in our youth is both a national resource and a national responsibility*.[1]

This changed attitude toward academic achievement created concern about the poor scholastic performance which affects a segment of our youth:

> The intellectual resources of our country are wasted prodigiously: approximately 50 per cent of our college capable youngsters never complete the college education: the majority of our academically talented females do not aspire

---

[1] Bruce Shertzer (ed.), *Working with Superior Students* (Chicago: Science Research Associates, 1960), 5.

> to professional careers: and we are scarcely beginning to appreciate the untapped potential resources within our culturally and economically deprived classes.[1]

If the future of our country depends on careful husbanding of our intellectual wealth, it cannot afford this loss.

Poor achievement is particularly distressing among academically talented students, from whom scholastic success is anticipated. Yet it is not uncommon. It has been stated that practically all gifted children underachieve to some extent,[2] and that from one-quarter to one-third of our gifted do not reach their potential.[3] Further, a study in New York City found 50 per cent of the more able students not functioning at expected levels.[4] Another writer notes that of those high school students who rank in the top third in intellectual ability, only 45 per cent graduate from college.[5]

Such estimates indicate that a significant proportion of academic talent is going to waste. In terms of their potential contribution to society, these low-achieving young people represent a serious loss. Of equal concern is the effect which low achievement has on the capable individual himself, for scholastic failure may produce feelings of inadequacy and inferiority.

---

[1] Elizabeth M. Drews, Guidance for the Academically Talented Student (Washington: National Education Association, 1961), 27.

[2] John C. Gowan, "The Underachieving Gifted Child--A Problem for Everyone," Exceptional Children, XXI (April, 1955), 247-49, 270-71.

[3] Charles A. Wedemeyer, "Gifted Achievers and Non-Achievers," Journal of Higher Education, XXIV (January, 1953), 25-30.

[4] Morris Krugman and Irene H. Impellizzeri, "Identification and Guidance of Underachieving Gifted Students," Exceptional Children, XXVI (February, 1960), 283-86.

[5] Dael L. Wolfle, "Diversity of Talent," The American Psychologist, XV (August, 1960), 535-45.

This problem of underachievement, an unexplained discrepancy between scholastic aptitude and scholastic performance, has been the subject of extensive speculation and research. Most authorities seem to agree that "The student of outstanding capacity who fails to achieve scholastically at a level reasonably commensurate with his ability presents a challenge to educators, administrators, and counselors."[1]

Usually, the schools look to the guidance service for help in this regard. Individual counseling is often recommended as a logical treatment on the grounds that emotional problems block the underachiever's ability. Thus, thirty years ago, Stagner noted that "...students of great promise are being allowed to go to wreck upon the reefs of personality maladjustment when a successful adaptation might be relatively simple with adequate guidance."[2]

Today, many a writer comes to the same conclusion: The underachiever needs "guidance," whatever that may mean. There is a certain naiveté in this approach, which expects that the counselor will transform a student into a more efficient achiever. It is not surprising that experiments with counseling as a "cure" for underachievement have been disappointing.

Others have suggested that the role of the guidance worker should be to identify the underachiever and inform the teachers of his needs:

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[1] Robert J. Dowd, "Underachieving Students of High Capacity," Journal of Higher Education, XXIII (June, 1952), 327.

[2] Ross Stagner, "The Relation of Personality to Academic Aptitude and Achievement," Journal of Educational Research, XXVI (May, 1933), 655.

> When a student is achieving below his potential, it is important that the teacher know the actual discrepancy between ability and achievement and thus be prepared to challenge the unused potential.[1]

Strang states that the counselor has an obligation to help teachers by finding those who have special needs, supplying data, and conferring with teachers about ways of helping.[2] Even the fact of identification is of value, for it generates interest in the problem.[3]

It should be especially helpful to point out the underachiever's high ability (which may not be evident), his antagonism toward adult authority, and his need for support and encouragement.[4] In a word: "Teachers should be apprised of the observations, evaluations, and recommendations of other specialists, so that later they can return to the classroom to implement these suggestions."[5] In this view, the counselor is seen as aide and consultant to the teacher, a function predicted to be the emerging role of the school counselor.[6]

Perhaps this technique would afford a better approach to the problem at hand. Underachievement occurs in the classroom; it is there it must be ameliorated. It is, in fact, the interaction between teacher and student that is the core of the problem. The typical bright underachiever is perfectly able to learn. That he does learn is attested by his fine scores on standardized tests. His fault, rather, is non-performance in the classroom. He cannot or will not perform in a manner satisfactory to the teacher.

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[1] Drews, op. cit., 56-57.

[2] Ruth Strang, "The Counselor's Contribution to the Guidance of the Gifted, the Underachiever, and the Retarded," Personnel and Guidance Journal, XXXIV (April, 1956), 494-97.

[3] Krugman and Impellizzeri, op. cit.

[4] Byron B. Williams et al., "Identifying Factors Relating to Success in School," (Rochester, New York: New York State Education Department, 1962). (Mimeographed.)

[5] Leonard M. Miller (ed.), Guidance for the Underachiever with Superior Ability (Washington: Office of Education, 1961), 45.

[6] C. Gilbert Wrenn, The Counselor in a Changing World (Washington: American Personnel and Guidance Association, 1962).

The counselor's efforts might better be directed toward changing the pattern of response between teacher and student. This can be done by identifying the underachiever to the teacher and supplying information about him. Such information enables the teacher to know the student better and seems thereby to change the teacher's perceptions of the student. Sturgis, for example, found a relation between the effectiveness of teaching and the teacher's knowledge of the student's personal background.[1] Ideally, this information will tend to change the teacher's feelings about the student, adding some dimension of helping to what had been otherwise a largely academic relationship. Ojemann and Wilkinson reported such a result many years ago.[2] If the teacher is given personal information about a student, information which he ordinarily does not have, he often becomes more understanding of this student and more open to ways of encouraging and aiding him.

This interest and helpfulness should, in turn, affect the attitudes of the student. Discouraged by his inability to function effectively, the high-potential low-achiever is prey to frustration. Shaw,[1] for example, found that such students tend to feel less positive about themselves. Brookover, Paterson, and Shailer[2] showed that high-achieving groups have a higher mean self concept of ability than the low-achieving groups of similar intelligence.

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[1] Horace W. Sturgis, "The Relationship of the Teacher's Knowledge of the Student's Background to the Effectiveness of Teaching" (unpublished Ph.D. dissertation, New York University, 1958).

[2] Ralph H. Ojemann and Frances R. Wilkinson, "The Effect on Pupil Growth of an Increase in Teacher's Understanding of Pupil Behavior," *Journal of Experimental Education*, VIII (December, 1939), 143-47.

In fact, self-theorists such as Lecky[3] posit a direct relationship between self concept and scholastic achievement. The child who perceives himself as a poor student will behave in a manner consistent with this image. Thus, improvement in scholastic performance involves a change in self concept.

It may be that the teacher is in a position to effect change in the student's self concept. Acceptance and encouragement could help the child to feel more confident of himself. And if the teacher's efforts actually bring about improved achievement, the student's self feelings will receive another boost.

Therefore, the process of helping teachers to know more about students may produce attitudinal changes in both the teacher and the student. Such changes should be a vital step in altering the typical classroom non-performance of the high-potential, low-achieving student.

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[1] Merville C. Shaw, Kenneth Edson, and Hugh M. Bell, "The Self-Concept of Bright Underachieving High School Students as Revealed by an Adjective Check List," Personnel and Guidance Journal, XXXIX (November, 1960), 193-96.

[2] Wilbur B. Brookover, Ann Paterson, and Thomas Shailer, Self-Concept of Ability and School Achievement (East Lansing, Michigan: Michigan State University, 1962).

[3] Prescott Lecky, Self-Consistency: A Theory of Personality (New York: Island Press, 1945).

II. PURPOSE OF THE STUDY

From this line of reason, several conclusions seem warranted. Poor achievement among able youth is common enough to constitute a challenge to our schools. The guidance service, most often concerned, is in need of effective techniques for attacking this problem. On the basis of the rationale just presented, it appears that supplying teachers with personal information about able, underachieving students is worthy of experimental investigation.

The purpose of this research, then, is to study the effects of giving teachers information about high-potential, low-achieving students. The students will be identified, information will be gathered about them, and this information will be distributed to the classroom teacher. It is predicted that this procedure will change the way the identified students and their teachers interact. That is, the personal information will make the teacher more aware of the particular student, more concerned, more understanding of student problems than he would otherwise be. Consequently, the teacher may become interested in helping the underachiever to improve his performance.

III. SIGNIFICANCE OF THE STUDY

This study comes at a time when national concern is being directed to the question of poor scholastic achievement among our able youth. Indeed, the loss of talent is seen in some quarters as a threat to our country.

Guidance workers, particularly, need help in this problem. In this experiment, a technique for assisting teachers in working with high-potential, low-achieving students will be demonstrated and evaluated.

This study will examine whether a counselor can help the underachieving student by working through the classroom teacher.

IV. HYPOTHESES OF RESEARCH

Having described the rational structure on which this research is based, it is possible to formulate the kinds of data that will need to be collected. The General Hypothesis may be stated as follows:

Identifying a group of high-potential, low-achieving students and supplying information about them to their teachers will produce student improvement in academic performance and in self feelings.

The Operational Hypothesis suggests specific ways in which relevant data may be obtained:

As a result of this experiment, significant differences will appear between the experimental and control groups in (1) grade point average, and (2) a self report inventory.

The Null Hypothesis is formulated for statistical purposes:

At the conclusion of the experiment, there will be no statistically significant differences between the experimental and control groups in (1) grade point average, or (2) a self report inventory.

V. RELATED QUESTIONS

A number of questions related to this hypothesis will be investigated in the course of this study:

A. How will the teachers react to the pupil information they receive?

B. In what ways will the teachers use this information?

C. Does this procedure of supplying information to the teachers seem a feasible technique for the counselor?

D. Will there be meaningful differences in the self report scores of able high achievers and low achievers?

E. Will low achievers, selected on the basis of grade point average, also be low achievers on a standardized achievement test?

F. Will the experimental group make gains in achievement test scores over the control group?

G. What demographic and attitudinal variables are characteristic of low achievers, as opposed to high achievers?

VI. LIMITATIONS OF THE STUDY

There are certain limitations inherent in a study of this type. One of these involves the use of "no-treatment" controls for comparison with the experimental group. There is no assurance that such students, though not identified for treatment, are not actually receiving help from a counselor or special attention from a teacher. Indeed, directing the teacher's attention to some students may make him curious about others.

Again, it will be difficult to know how the teachers use the information that is supplied to them. It is assumed that the information will have some effect on the teacher. Just what effect is difficult to predict. It may bring sympathy and understanding from some teachers. It could bring rejection from another, who sees this student as a misfit or a threat to his authority. The major concern is whether the information will produce enough change in the situational relationship to bring about improved student performance.

The use of teacher marks as a measure of achievement may be criticized. However, since it is in earned grades that underachievement is manifest, it is necessary to use teacher marks. These marks, it should be noted, become the student's permanent secondary school record and are widely considered the best predictor of success in college. (Justification for the use of teacher marks will be elaborated in Chapter III.)

It is conceivable that a teacher, wishing to help a student or to cooperate with the research, may give the identified student a higher grade. Yet, it is fully as possible that another teacher may lower the student's grade after learning that he is not working up to his capacity.

In this as in other limiting aspects of the study, the possible effects of uncontrolled variables should be cancelled by the large number of students and teachers involved and by the relatively long duration of the experiment.

VII. ASSUMPTIONS UNDERLYING THE STUDY

In research devoted to underachievement, there are fundamental assumptions which should be explicit. Primarily, it is assumed that individuals vary in capacity for scholastic work, that aptitude tests differentiate levels of academic ability, and that marks and standardized tests measure the extent of achievement. It is assumed that students of similar academic ability as inferred from aptitude tests are capable of similar academic achievement as reported by teacher marks. In other words, test performance should be positively related to school performance.

This research rests basically on the commonly held assumption that there are able students who do not utilize their ability in school, and that it is possible for them to improve their level of accomplishment. Finally, in this research, grades are used as indicators of achievement, rather than such things as creativity or success in non-school activities.

VIII. DEFINITIONS OF IMPORTANT TERMS

It is crucial to research that there be clear definition of the concepts that are being studied. Instead of the term "underachiever," this report will use the designation "high-potential low-achiever."

A. High-potential: A student shall be considered "high-potential" if he obtains a score above the 75th percentile, national norms, on the School and College Ability Test administered in the first semester of the 10th grade.

B. Low-achieving: A student shall be considered "low-achieving" if his grade point average for academic subjects in the first semester of the tenth grade is 2.0 (C) or lower.[1]

C. Self Concept: The self concept may be defined as an organized configuration of perceptions of the self which are admissible to awareness. The instrument used in this research, the Bills Index of Adjustment and Values, separates these perceptions into Self Concept (the way a person sees himself), Self Attitude (the way he feels about himself), and Self Ideal (the way he would like to be).

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[1] The basis for these definitions is detailed in Chapter III.

CHAPTER II

SURVEY OF LITERATURE

I. THE MEANING OF UNDERACHIEVEMENT

Underachievement is a popular subject in educational circles, and the quantity of research it has generated is vast. Though the term is recent and lacks definite meaning, it has become acceptable and appears regularly in the professional journals.

The problem which it describes, a discrepancy between ability and performance, is an ancient one. The correlation between ability and achievement runs only .30 to .70 even in college populations.[1] For this reason, selection and prediction has long been a concern to college personnel officers. In 1940, for example, Harris[2] reviewed studies of factors affecting college grades published from 1930-37 and included a bibliography of 328 articles.

A. History

When and where the term "underachiever" originated is difficult to determine. Harris' bibliography includes such terms as "non-achiever," and "discrepant achiever." The earliest use found was in 1943.[1]

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[1] Henry Weitz and H. Jean Wilkinson, "The Relationship Between Certain Non-Intellective Factors and Academic Success in College," Journal of Counseling Psychology, IV (Spring, 1957), 54-60.

[2] D. Harris, "Factors Affecting College Grades: A Review of the Literature 1930-1937," Psychological Bulletin, XXXVII (March, 1940), 125-66.

Some indication of the tremendous acceptance of this term may be obtained by an examination of the Education Index. "Underachievement" is not indexed in this guide until the 1957-59 edition. (In 1957, the Soviets launched the first earth satellite.) The previous volume, 1955-57, in the category "Achievement Quotient," had two articles bearing on underachievement. In the 1957-59 volume, the reader is referred to "Ability and Achievement," where there are 23 articles on this subject. In the 1959-61 volume, there are 43 articles. And the one-year volume, 1961-62, half the size of the others, contains 30 articles.

B. Definition

One of the first problems in a discussion of underachievement centers on agreeing as to just what is being discussed. Even the very concept has been attacked. Dulles, for example, says, "It is fairly clear then that given all the biological and social factors every organism achieves what it can achieve."[2] Kowitz and Armstrong[3] consider underachievement a function of test reliability and validity and deplore converting differences based on chance factors to differences of diagnostic significance.

Nevertheless, ranged against these futile voices are literally hundreds of studies which indicate general agreement as to the meaning of underachiever: a student who has the ability to achieve a level of academic success significantly above that which he actually attains. But the process of translating this concept into an exact operational definition is fraught with difficulties.

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[1] R. P. Fischer, "The Role of Frustration in Academic Underachievement: An Experimental Investigation," Journal of American Association of College Registrars, XVIII (April, 1943), 227-38.

[2] Robert J. Dulles, "The Myth of Underachievement," Journal of Educational Sociology, XXXV (November, 1961), 121.

[3] Gerald T. Kowitz and Charles M. Armstrong, "Under-Achievement: Concept or Artifact?" School and Society, LXXXIX (October 21, 1961), 347-49.

C. Selection Criteria

There are four criteria which must be set to select a population of underachievers and each of these is subject to diverse interpretations:[1]

1. Universe to be sampled

The underachieving students must be identified from a group. Is the group elementary school, high school, or college? How valid are comparisons of different age groups? Are the dynamics of underachievement the same in male and female? Is the orientation of the school academic, vocational, or comprehensive? Does the locale have distinctive racial, religious, or social class characteristics?

2. Measure aptitude

On what basis is the student assumed to be able--teacher opinion, past performance, a standardized test? If the research concerns the underachiever of high ability, how is that defined? Is the selected I.Q. superior in this particular school? Can one predict marks from aptitude?

3. Measure of achievement

How shall the student's performance be evaluated? The common dilemma is whether to use teacher marks or standardized achievement tests. It's not an either/or proposition; they apparently don't measure the same thing. Often, students selected as underachieving on the basis of marks will score as well as high achievers on standardized tests. Evidently there are able students who do not learn, and others who learn but do not perform in class.

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[1] See: John Peterson, "The Researcher and the Underachiever: Never the Twain Shall Meet," Phi Delta Kappan XLIV (May, 1963), 379-81.

4. Measure of discrepancy

Underachievement is defined as a discrepancy between aptitude and achievement. But how great must the gap be to constitute malfunctioning? Is the achievement level merely below the mean for the student's ability group, or is it one or two standard deviations below? Probably the more extreme the discrepancy, the more deviant the behavior. Do all underachievers have the same characteristics, differing only in degree?

Obviously these four criteria will designate the subjects selected for study, which will, in turn, influence the research results.

The literature reveals many techniques. Perhaps this is why the literature also reveals disagreement as to the dynamics of underachievement.

D. Data Collection

Once the individuals have been selected, the next step involves collection of data. Usually, the underachiever is compared to a "normal" student whose performance is closer to prediction, the assumption being that these two will differ in certain measurable characteristics.

A host of data-gathering techniques have been employed: personal interviews, school records, teacher ratings, questionnaires, personality inventories, and projective devices. It is easy to find fault with these. Some are judgmental; others are experimental devices of dubious validity or instruments designed to explore other aspects of personality. Results based on them should be tentative, awaiting the reinforcement of further evidence.

Frequently, this has not happened. Items found to be significant in one place but not in another cannot be termed elements of an underachievement syndrome. Furthermore, even with factors which appear consistently, there remains the need to establish causality between those items and the pattern of behavior known as underachievement.

The problems of definition, selection, and data collection have been described at some length, for they are crucial to any discussion of underachievement. The sophisticated consumer of research must continually question: How does this writer define underachievement? How was the sample selected? What data were collected? Only then can one assess the conclusions which are drawn.

This survey attempts to bring coherence to the large body of available research rather than to critically examine each individual study. The reader needs to maintain an awareness of the limitations which plague many of these and to consider the results as tentative groupings toward a definite statement.

This survey consists of two sections: (1) a compilation of representative studies dealing with the underachiever, and (2) a summary of conclusions which are related to this present experiment.

II. DESCRIPTION OF THE UNDERACHIEVER

A large share of the research has been directed to the psychological make-up of the underachiever. These insights could be a first step in understanding the behavioral characteristics of these students.

A. Adjustment

A common assumption is that the underachieving student's poor performance is the result of emotional problems.

There is a history of interest in the relation of adjustment to scholastic achievement. Stagner,[1] in 1933, and Darley,[2] in 1937, argued that maladjustment prevents promising students from utilizing their ability. Even earlier, Conklin[3] had examined comparable groups of scholastically successful and unsuccessful gifted children and uncovered problems and tangled feelings in both groups.

More recently, Anderson[4] suggested that underachievement, per se, should cause suspicion of maladjustment. This view is supported by several investigators. Horrall[5] states that academic underachievement among brilliant students is a symptom of deep-seated personality problems. Lewis[6] found that low achievers had traits considered undesirable from a mental health point of view. Others have shown better performance among better adjusted students[7] and higher positive correlations between grades and aptitude test scores for the "normal" as compared to "maladjusted."[1] Pierce[2] found high achievers better adjusted; Burgess[3] called high achievers better adjusted to the college situation.

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[1] Stagner, op. cit.

[2] J. G. Darley, "Scholastic Achievement and Measured Maladjustment," Journal of Applied Psychology, XXI (October, 1937), 485-93.

[3] Agnes M. Conklin, "A Study of the Personalities of Gifted Students by Means of the Control Group," American Journal of Orthopsychiatry, I (January, 1931), 178-83.

[4] John R. Anderson, "Do College Students Lack Motivation?" Personnel and Guidance Journal, XXXIII (December, 1954), 209-10.

[5] Bernice M. Horrall, "Academic Performance and Personality Adjustments of Highly Intelligent College Students," Genetic Psychology Monographs, LV (February, 1957), 3-83.

[6] W. D. Lewis, "A Comparative Study of the Personalities, Interests, and Home Backgrounds of Gifted Children of Superior and Inferior Educational Achievement," Journal of Genetic Psychology, LIX (September, 1941), 207-18.

[7] Irving L. Berger and Alvin R. Sutker, "The Relationship of Emotional Adjustment and Intellectual Capacity to Academic Achievement of College Students," Mental Hygiene, XL (January, 1956), 65-77.

However, other research has shown the converse. Griffiths[4] using the Bell Adjustment Inventory with a college population, found that men with brilliant scholastic records were no better adjusted than men of lowest academic achievement. Again, Dowd[5] reported only small differences between high and low achievers, generally toward better adjustment among the low group. One result states that the underachiever's responses indicated "uniformly and without exception" better adjustment and more extroversion than the normal achiever or the overachiever.[6]

These results suggest that maladjustment is often a factor in underachievement, especially among bright students, but no causal relationship is implied. Disturbance has been found in high achievers as well as low. The student may look maladjusted in the school situation and yet function effectively in other spheres.

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[1] Donald P. Hoyt and Warren T. Norman, "Adjustment and Academic Predictability," Journal of Counseling Psychology, I (Summer, 1954), 96-99.

[2] James V. Pierce, "The Educational Motivation Patterns of Superior Students Who Do and Do Not Achieve in High School," Report of research performed for U. S. Office of Education, University of Chicago, 1959. (Mimeographed.)

[3] Elva Burgess, "Personality Factors of Over- and Under-Achievers in Engineering," Journal of Educational Psychology, XLVII (February, 1956), 89-99.

[4] George R. Griffiths, "The Relationship Between Scholastic Achievement and Personality Adjustment of Men College Students," Journal of Applied Psychology, XXIX (October, 1945), 360-67.

[5] Dowd, op. cit.

[6] William A. Owens and Wilma C. Johnson, "Some Measured Personality Traits of Collegiate Underachievers," Journal of Educational Psychology, XL (January, 1949), 41-46.

B. Self Concept

Another body of research describes the underachiever in terms of self theory,[1] seeking evidence of a relation between the student's perception of himself and his academic performance.

Several of the investigations have used adjective check lists to compare self reports. The results of these studies are quite uniform in portraying the high achiever as tending to feel more positive about himself, especially in qualities associated with scholastic success.[2, 3, 4, 5, 6]

Thus, the high achiever checks such self-descriptive terms as *alert*, *dependable*, *clear-thinking*, *enthusiastic*, *aggressive*, *confident*, *intelligent*, *self-reliant*, *pleasant*, and *reliable*. The low achiever, on the other hand, checks *reckless*, *stubborn*, *mischievous*, *immature*, *inhibited*, *argumentative*, *rebellious*, *restless*, *nervous*, and *unambitious*. There is some variation in the studies, but the consistent impression is of the "wholesome" high achiever, the teacher's joy, versus that unpredictable and undependable "wretch," the low achiever.

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[1] For an introduction to self theory, see: Camilla M. Anderson, "The Self-Image: A Theory of Dynamics of Behavior," *Mental Hygiene*, XXXVI (April, 1952), 227-44.

[2] Harrison G. Gough, "The Construction of a Personality Scale to Predict Scholastic Achievement," *Journal of Applied Psychology*, XXXVII (October, 1953), 361-66.

[3] Chris D. Kehas, "Underachievement as a Function of Self Concept," Paper read at APGA Convention, Boston, Massachusetts, 1963.

[4] Lewis, *op. cit.*

[5] Pierce, *op. cit.*

[6] Shaw, Edson, and Bell, *op. cit.*

There appear to be differences in the self reports of achievers and non-achievers. Shaw and Alves,[1] for example, report a lower mean self concept and self acceptance score for underachievers, but the instrument which they used included such adjectives as cooperative, dependable, obedient, studious, and thoughtful, which may have loaded the score toward the achiever group.

Walsh[2] tested the hypothesis that bright boys with learning difficulties see themselves as less adequate than those making satisfactory scholastic progress. Using a doll-play technique with young children, she found that adequate achievers are free to act, make choices, initiate activities. Low achievers exhibit blocking, which inhibits their actions. Adequate achievers generally make more effective use of opportunities. Low achievers are characterized more by passive compliance, evasion, or negativism.

Another aspect of self concept which has received attention is consistency, the need of the individual to behave in a manner congruent with his self image.[3] The underachiever, according to this orientation, has a vested interest in maintaining his poor performance level. Thus Goldberg and Passow[4] found the low achiever to have a different grade expectation from the high achiever: the low achiever expects to pass, but he does not anticipate high marks. Similarly, high-achieving groups have a significantly higher self concept of ability than do low-achieving groups of comparable measured intelligence.[1]

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[1] Merville C. Shaw and Gerald J. Alves, "The Self-Concept of Bright Academic Underachievers: Continued," Personnel and Guidance Journal, XLII (December, 1963), 401-03.

[2] Ann M. Walsh, Self-Concepts of Bright Boys with Learning Difficulties (New York: Teachers College, Columbia University, 1956).

[3] Lecky, op. cit.

[4] Miriam Goldberg and A. H. Passow, "Study of Underachieving Gifted," Educational Leadership, XVI (November, 1958), 121-25.

A research by Roth[2] further clarifies this phenomenon of consistency. Since the individual needs to maintain his self conception, he will deny or distort experience inconsistent with his conception. Persons able to integrate new experience into the self, and thereby change, will be less defensive than those who reject the experience and are unable to change.

Applying this hypothesis to a reading improvement class, Roth found a direct relationship between defensiveness in "self concept as a reader" and performance in a reading improvement situation. Self concept is related to achievement. Lack of improvement does not arise from incapacity to achieve; it is an expression of the person's choice, based on the needs of his self-system.

Another insight into the role of self concept in achievement is provided by an investigation of self evaluation. Borislow[3] found that college freshmen who underachieve could not be distinguished on the basis of a general self evaluation, but they did have a poor conception of themselves as students. The important factor is their evaluation of achievement. Underachievers striving for scholastic success have a more pessimistic view of themselves. Where scholastic accomplishment is not a prime goal, this is not true.

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[1] Brookover, Paterson, and Thomas, op. cit.

[2] Robert M. Roth, "The Role of Self-Concept in Achievement," Journal of Experimental Education, XXVII (June, 1959), 265-81.

[3] Bernard Borislow, "Self-Evaluation and Academic Achievement," Journal of Counseling Psychology, IX (Fall, 1962), 246-54.

Thus, although reports have proclaimed more "adequate" and more "positive" self concepts among high achievers, it is probably more realistic to speak of self "roles" or "self-in-situation" rather than global concepts. Brookover[1] measured "self concept of ability." Kehas[2] found no statistically significant differences between under, over and normal achievers on self concept, but he did find differences on the variable he termed "self-in-situation."

In summary, self concept is related to school performance. Achievement or underachievement has meaning in the phenomenal world of the individual; it fits his self conception. The self concept of the low achiever is different from that of the high achiever. His school achievement does not, however, tell us how he feels about himself as a person.

C. Personality

A common research device is to test comparable groups of high and low achievers with a standardized personality instrument to determine differences in psychological organization. Gebhart and Hoyt[3] conducted such an experiment, using the Edwards Personal Preference Schedule. The college men designated as overachievers scored higher on the scales for Order, Intraception, and Consistency, indicating intellectual curiosity, a drive to compete, and a need to organize and plan. The underachievers scored higher on the scales for Nurturance, Affiliation, and Change, indicating an interest in variety and in social situations. Krug,[1] also with college students, provides essentially the same findings.

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[1] Brookover, Paterson, and Thomas, *op. cit.*

[2] Kehas, *op. cit.*

[3] G. Gary Gebhart and D. P. Hoyt, "Personality Needs of Under- and Over-Achieving Freshmen," *Journal of Applied Psychology*, XLII (April, 1958), 125-28.

The Minnesota Multiphasic Personality Inventory has been used for psychometric comparisons. Morgan[2] found college achievers scored higher on Dominance (which implies optimism, persuasiveness, self-discipline, and resoluteness), Social Responsibility (which implies dependability, trustworthiness, and a sense of obligation to the group), and Intellectual Efficiency (which reflects self-confidence, energy, realistic attitudes, and insight). Non-achievers had elevations on the Psychopathic Deviate scale and lows on the scale for Paranoia, which may indicate that they are more callous, socially insensitive, irresponsible, and self-centered.

D. Personal Characteristics

Various other studies, using instruments or judgments, have discerned traits in the underachiever with sufficient frequency to warrant mention. Hostility is one of these characteristics. Kirk[3] first pointed this out, drawing inferences from cases seen at a college counseling center. She concludes that academic failure among able students is an unconscious expression of hostility, usually directed toward a member of the family who demands success. Kimball[4] also remarked a pattern of underlying aggression in underachieving boys at a private preparatory school.

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[1] Robert E. Krug, "Over and Underachievement and the Edwards Personal Preference Schedule," Journal of Applied Psychology, XLIII (April, 1959), 133-36.

[2] Henry H. Morgan, "A Psychometric Comparison of Achieving and Non-Achieving College Students of High Ability," Journal of Consulting Psychology, XVI (August, 1952), 292-98.

[3] Barbara Kirk, "Test Versus Academic Performance in Malfunctioning Students," Journal of Consulting Psychology, XVI (June, 1952), 213-16.

[4] Barbara Kimball, "Case Studies of Educational Failure During Adolescence," American Journal of Orthopsychiatry, XXIII (April, 1953), 406-15.

In both cases, the investigators observed that the hostility is denied overt expression. Instead, it finds outlet in the form of resistance to the demands of the teacher. Others substantiate this impression. Shaw and Grubb[1] found underachievers scored higher on three different hostility scales, and Gowan[2] discovered underachievers ranked higher on the Delinquency scale of the California Psychological Inventory.

These several instances convey a distinct impression of the underachiever as a kind of intellectual delinquent. Instead of aggressive, acting-out behavior, hostility is expressed passively in the form of poor scholastic performance.

Another characteristic repeatedly attributed to non-achievers is a devotion to pleasure. This student has been described as governed by strong hedonistic principles and motivated by pleasure seeking and extroversion.[3] At college, he devotes disproportionate time to movies, entertainments, and fraternal groups.[4] Duff and Siegel[5] found a negative relationship between effective utilization of ability and participation in physical, social, and heterosexual activities. Perhaps the underachiever is simply too social to spend time in the solitary study essential to academic success.[1]

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[1] Merville C. Shaw and James Grubb, "Hostility and Able High School Underachievers," Journal of Counseling Psychology, V (Winter, 1958), 263-66.

[2] John C. Gowan, "Dynamics of the Underachievement of Gifted Students," Exceptional Children, XXIV (November, 1957), 98-101.

[3] George Middleton and George M. Guthrie, "Personality Syndromes and Academic Achievement," Journal of Educational Psychology, L (April, 1959), 66-69.

[4] J. R. Gerberich, "Factors Related to the College Achievement of High-Aptitude Students Who Fail of Expectation and Low-Aptitude Students Who Exceed Expectations," Journal of Educational Psychology, XXXII (April, 1941), 253-65.

[5] O. Lee Duff and Laurence Siegel, "Biographical Factors Associated with Academic Over- and Underachievement," Journal of Educational Psychology, LI (February, 1960), 43-46.

Kurtz and Swenson[2] found that underachievers have problems in appearance and heterosexual adjustment, they lack confidence, and they are not highly regarded by peers. They have a negative attitude toward self and others,[3] and feelings of inferiority.[4] Underachieving girls regard themselves as less adequate than their friends.[5]

There is additional information which complicates the portrait. Bristow[6] describes the underachiever as self-sufficient, unsociable, and hard to reach. Again, he is unable to form warm relationships,[7] and he withdraws from social participation.[1] Fink[2] called both boy and girl underachievers "alienated socially." Though pleasure-oriented, they are so inadequate and passive that they never achieve their goals.

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[1] Owens and Johnson, op. cit.

[2] John J. Kurtz and Esther J. Swenson, "Factors Related to Over-Achievement and Under-Achievement in School," School Review, LIX (November, 1951), 472-80.

[3] J. W. Broedel et al., "The Effects of Group Counseling on Gifted Underachieving Adolescents," Journal of Counseling Psychology, VII (Fall, 1960), 163-70.

[4] Kimball, op. cit.

[5] John Malloy, "An Investigation of Scholastic Over- and Under-Achievement Among Female College Freshmen," Journal of Counseling Psychology, I (Winter, 1954), 260-63.

[6] William H. Bristow, Low Achievement: A Memorandum and Bibliography (New York: Board of Education of the City of New York, 1959).

[7] Louis A. Fliegler, "Understanding the Underachieving Gifted Child," Psychological Reports, III (December, 1957), 533-36.

There are even differences in the activities which high and low achievers choose. The underachiever prefers non-intellectual, motor activities.[3, 4] He enjoys tinkering, construction, experimentation.[5] He is more interested in sports and the opposite sex than in books or hobbies, and he is prone to "escape" activities.[6]

Roth[7] differentiates between overall limited achievement and achievement in deviant channels. In the former, the student's energies are directed against experiencing and toward the maintenance of the status quo. In the latter, the student expands his world of experience, but avoids areas related to accredited study.

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[1] Gowan (1957), op. cit.

[2] Martin B. Fink, "Objectification of Data Used in Under-Achievement--Self Concept Study," California Journal of Educational Research, XIII (May, 1962), 105-12.

[3] Lewis, op. cit.

[4] Samuel Pearlman, "An Investigation of the Problem of Academic Underachievement Among Intellectually Superior College Students" (unpublished Ph.D. dissertation, New York University, 1952).

[5] Kurtz and Swenson, op. cit.

[6] Williams, op. cit.

[7] Robert M. Roth and H. Arnold Meyersburg, "The Non-Achievement Syndrome," Personnel and Guidance Journal, XLI (February, 1963), 535-40.

A final characteristic of the underachiever has been labelled his "refusal to accept limitations." He sets very high goals for himself but refuses to make wholehearted efforts toward attaining them.[1] Refusal to risk becomes a defense against failure. It is a denial of normal, human limitations. The adequate achiever is more likely to accept himself, to be a "reasonable adventurer."[2]

E. Future Plans

The educational and vocational plans of the underachiever have been studied to determine if he is pursuing an appropriate curriculum or has unrealistic aspirations. First, vocational interests, for example, have been compared. Secondary school boys who were achievers more often had high Kuder scores in Scientific and Computational; low achievers had highs in Mechanical and Artistic.[3] A study of college students, using the Strong Vocational Interest Blank, found high achievers chose Group V, Social Service. Low achievers chose Group VIII, Business Detail, or Group IX, Sales Contact.[4] These results match psychological descriptions cited earlier.

Studies of maturity level and realism of goal choices show underachievers more likely to aspire to "glamour" occupations, such as athletics or entertainment.[1] Conversely, high achievers have more desire for further education and show clearer and more reasonable vocational aims.[2, 3] Even in the sixth grade, high achievers make more mature goal choices than low achievers.[4]

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[1] Emanuel M. Berger, "Willingness to Accept Limitations and College Achievement," Journal of Counseling Psychology, VIII (Summer, 1961), 140-44.

[2] S. Roy Heath, "The Reasonable Adventurer and Others," Journal of Counseling Psychology, VI (Spring, 1959), 3-12.

[3] Edward Frankel, "A Comparative Study of Achieving and Underachieving High School Boys of High Intellectual Ability," Journal of Educational Research, LIII (January, 1960), 172-80.

[4] Morgan, op. cit.

Dowd[5] hypothesized a cause of underachievement in the conflict between the student's interests and the course of study he followed. In support, Armstrong[6] showed that underachievers had frequently chosen a future occupation because of the influence of others, a goal which did not agree with their dominant interests as measured by the Kuder. This suggests a need for change away from the alien curriculum, which constitutes a divorce from the person who dominates the underachiever.[7]

But not all agree: Motto[8] calls dissatisfaction with curriculum a defense to avoid the real problem. And two other studies found that congruence between measured interests and stated occupational aims was not related to academic achievement.[1, 2]

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[1] T. R. Ford, "Social Factors Affecting Academic Performance: Further Evidence," School Review, LXV (Winter, 1957), 415-22.

[2] Franklyn A. Graff, "Occupational Choice Factors in Normally Achieving and Underachieving Intellectually Superior Twelfth Grade Boys" (unpublished Ph.D dissertation, University of Connecticut, 1957).

[3] Kurtz and Swenson, op. cit.

[4] Jack Bagford, "A Comparison of the Goal Maturity Scores of Selected Groups of High- and Low-Achieving Sixth Grade Students" (unpublished Ed.D dissertation, Indiana University, 1960).

[5] Dowd, op. cit.

[6] Marion E. Armstrong, "A Comparison of the Interests and Social Adjustment of Underachievers and Normal Achievers at the Secondary School Level" (unpublished Ph.D. dissertation, University of Connecticut, 1955).

[7] James Drasgow, "Underachievers," Journal of Counseling Psychology, IV (Fall, 1957), 210-11.

[8] Joseph J. Motto, "A Reply to Drasgow on Underachievers," Journal of Counseling Psychology, VI (Fall, 1959), 245-47.

F. Relation to School and Teachers

That the underachiever is a problem to the school has been often noted in the literature: The underachiever has a predominately negative attitude toward school[3] and is more often referred for disciplinary infractions.[4] This student is more critical of educational methodology,[5] is less willing to conform to classroom routines and regulations,[6] and is poorly adjusted to school rules and procedures.[7]

Particularly troublesome are the underachiever's relations with his teachers. He does not identify with them or consider them ideal figures.[8] Fliegler[9] asserts that the roots of this antipathy lie in poor family relationships which have caused rejection of authority figures

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[1] Morgan, op. cit.

[2] Ralph M. Rust and F. J. Ryan, "The Strong Vocational Interest Blank and College Achievement," Journal of Applied Psychology, XXXVIII (October, 1954), 341-45.

[3] Harry O. Barrett, "An Intensive Study of 32 Gifted Children," Personnel and Guidance Journal, XXXVI (November, 1957), 192-94.

[4] Frankel, op. cit.

[5] Mable K. Lum, A Comparison of Under- and Over-Achieving Female College Students," Journal of Educational Psychology, LI (June, 1960), 109-14.

[6] William F. Brown, Norman Abeles, and Ira Iscoe, "Motivational Differences Between High and Low Scholarship College Students," Journal of Educational Psychology, XLV (April, 1954), 215-23.

[7] Kent R. Granzow, "A Comparative Study of Underachievers, Normal Achievers and Overachievers in Reading" (unpublished Ph.D. dissertation, State University of Iowa, 1954).

[8] Ford, op. cit.

[9] Fliegler, op. cit.

and parent surrogates. Golburgh and Penney[1] agree: since the relationship of teacher to pupil duplicates aspects of the parent-child relationship (demands, expectations, rules, criticism, censure, etc.), the student is likely to act out with the teacher the conflict he experiences with his parents.

It is understandable that the teacher is not fond of the underachiever.[2] He likes to argue but dislikes criticism. He shows little interest, exerts no effort, fails to complete work. The teacher feels inadequate and comes to doubt the student's ability. If he has so much talent, why doesn't he show it?

Negative feelings on both sides interfere with classroom performance. However, learning does occur. Poor classroom performers tend to score as well as the better students on achievement tests.[3] Malpass demonstrated that a student's perception of school is related to achievement as measured by grades, but not as measured by standardized tests.[4]

Pippert and Archer, finding that underachievers selected on grade point average scored as well as achievers on standardized tests, speculate: "Perhaps these students have some personal characteristic which teachers find unpleasant, or lack some trait which teachers deem important, and consequently are not as fully rewarded for their actual achievement."[1] This understatement points to the traditions of the school in rewarding certain behaviors and punishing others, irrespective of the learning that is taking place.

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[1] Stephen J. Golburgh and James F. Penney, "A Note on Counseling Underachieving College Students," Journal of Counseling Psychology, IX (Summer, 1962), 133-38.

[2] Williams, op. cit.

[3] Merville C. Shaw and Donald J. Brown, "Scholastic Underachievement of Bright College Students," Personnel and Guidance Journal, XXXVI (November, 1957), 195-99.

[4] Leslie F. Malpass, "Some Relationships between Students' Perceptions of School and Their Achievement," Journal of Educational Psychology, XLIV (December, 1953), 475-82.

As one would assume, the poor achiever is not diligent. Two reports show that college achievers spend more time studying,[2, 3] and Parks[4] found that junior high underachievers display poor work habits and study skills. Perhaps more significant, the underachiever procrastinates, daydreams, and is unable to concentrate when he tries to study.[5, 6, 7] Time spent at the desk may not be productive. He is inclined to rationalize: I got behind, the teacher wasn't clear, the subject is boring.[8]

This may be a defense.[9] Perhaps the inability to study is a manifestation of unconscious aggressive feelings toward the parents. By not studying, the student assures failure, and thereby conducts a subtle but effective attack against his antagonists. The student's choice for achievement operates most clearly in the preparation he makes.[1] If non-achievement has meaning in this individual's behavior, he will show this choice through ineffective preparation.

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[1] Ralph Pippert and N. Sidney Archer, "A Comparison of Two Methods for Classifying Underachievers with Respect to Selected Criteria," Personnel and Guidance Journal, XLI (May, 1963), 788-91.

[2] E. M. Boyce, "A Comparative Study of Overachieving and Underachieving College Students on Factors Other Than Scholastic Aptitude" (unpublished Ph.D. dissertation, University of Wisconsin, 1956).

[3] Dowd, op. cit.

[4] Anne B. Parks, "Do They Know How to Study?" The School Counselor, XI (December, 1963), 119-21.

[5] Brown, Abeles, and Iscoe, op. cit.

[6] Gerberich, op. cit.

[7] William G. Stover, "Factors Related to Underachievement of High School Students" (unpublished Ed.D. dissertation, Stanford, 1956).

[8] Kirk, op. cit.

[9] Golburgh and Penney, op. cit.

III. CAUSES OF UNDERACHIEVEMENT

A. Family Background

Considerable research has been directed to the home situation from which the underachiever has emerged. Here are consistent findings, establishing the existence of inadequate personal relations within the family group.

There are many reports, ranging from critical to denunciatory. Lewis[2] describes the underachiever's home as inferior; Watson calls it "brutalizing, over-powering, extremely destructive."[3] The family relationships are distant.[4] There is less exchange of affection,[5] more antagonism, resentment, rejection;[6] less identification with the parents.[7] The evidence of discord is overwhelming.

To these parents, child-rearing has not come easy. They have been categorized as confused and inconsistent to their handling of the child;[1] they disagree as to the standards of behavior to expect;[2] they are over-anxious, over-solicitous, and confused.[3]

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[1] Roth and Meyersburg, op. cit.

[2] Lewis, op. cit.

[3] Gladys H. Watson, "Emotional Problems of Gifted Students," Personnel and Guidance Journal, XXXIX (October, 1960), 98-105.

[4] Charles Henry Richmond, "A Study of Predicted and Measured Achievement and Some Possible Causative Factors" (unpublished Ed.D. dissertation, University of Oklahoma, 1959).

[5] Kurtz and Swenson, op. cit.

[6] John R. Anderson, op. cit.

[7] Bristow, op. cit.

Drews[4] found that high achievers, on the other hand, come from a family in which the adult knows what is best, and where adult standards are not often criticized. There are distinct differences in the home of the underachiever.[5] Rather than accept the child as a unique individual, the parents act out on him their own needs, thereby inhibiting growth toward spontaneity, independence, and assertiveness.[6]

Fliegler[7] hypothesizes that as a result of the familial patterns of rejection and domination, the underachiever has come to dislike people and to view the world negatively. Roth[8] suggests that a subtle devaluation of the child through attention only to his failures has ingrained patterns of self-denigration which are expressed and reinforced by scholastic failure. The hostility produced by the barren family relations finds one outlet in resistance to learning.

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[1] Williams, op. cit.

[2] John R. Tibbetts, "The Role of Parent-Child Relationships in the Achievement of High School Pupils" (unpublished Ph.D. dissertation, New York University, 1954).

[3] Barrett, op. cit.

[4] Elizabeth M. Drews and John E. Teahan, "Parental Attitudes and Academic Achievement," Journal of Clinical Psychology, XIII (October, 1957), 328-32.

[5] Bernard C. Rosen, "The Achievement Syndrome: A Psychocultural Dimension of Social Stratification," American Sociological Review, XXI (April, 1956), 203-11.

[6] Drews, op. cit.

[7] Fliegler, op. cit.

[8] Roth and Meyersburg, op. cit.

B. Influence of the Father

A number of investigations have singled out the father as contributor to the problem situation, especially for the male child. One particularly well-designed experiment measured actual interaction between fathers and sons in situation.[1]

Fathers of high achievers were less rejecting, less dominating, less inclined to push. The rejecting, dominant father acts as a threat to the boy and a deterrent to the development of his achievement drive.

Kimball[2] found poor father-son relationship a consistent pattern among underachievers. Warm, close attachments were never observed; usually there were strong aggressive feelings which were denied expression and appeared as passivity and negativism. In a similar vein, Pierce[3] found that high-achieving boys and girls named their fathers as important influences in their lives more often than did their low-achieving peers.

The educational and occupational status of the father is difficult to categorize. Both Frankel[4] and Westfall[5] found that the father of the underachiever ranked lower in education and occupation. Similarly, Pearlman[6] states that more college achievers had fathers who had gone beyond the baccalaureate level.

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[1] Rosen, op. cit.

[2] Kimball, op. cit.

[3] Pierce, op. cit.

[4] Frankel, op. cit.

[5] F. W. Westfall, "Selected Variables in the Achievement or Non-Achievement of the Academically Talented High School Student" (unpublished Ed.D. dissertation, University of Southern California, 1958).

[6] Pearlman, op. cit.

However, it is possible to cite evidence that the father of the low achiever ranks higher in education and occupation,[1] and that there is no difference between the fathers of high and low achievers.[2] Apparently, the father's status is less vital than the father-son relationship, and the cultural richness of the home is independent of the father's economic level.

C. Societal Influences

Several writers, rather than focus on the individual, have stressed the role that social values play in the promulgation of underachievement. Shertzer offers an expression of this viewpoint:

> We cannot expect our children to work hard at learning unless we commit ourselves to learning, become interested in it, become familiar with its frustrations, and enjoy its pleasures. Commitment to learning must become a part of the American way of life, an integral facet of our national character.[3]

Few aspects of contemporary society incite the pursuit of academic excellence.[4] Far from encouraging independence and originality, our society rewards conformity. Rather than hard work and self denial, we prize sociability and hedonism. The intellectually gifted individual faces a dilemma:

> A culture that adores financial status, physical beauty, second-rate professional entertainment, and the accumulation of material things creates an alien world for the brilliant student.[5]

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[1] Boyce, op. cit.

[2] Goldberg and Passow, op. cit.

[3] Shertzer, op. cit., 251.

[4] Jacob W. Getzels, "Social Values and Individual Motives: The Dilemma of the Gifted," School Review, LXV (Spring, 1957), 60-63.

[5] Miller, op. cit., 6.

To the adolescent, the values of the peer culture are a powerful influence. Coleman demonstrated that this subculture, rather than valuing scholarship, rewards the "star athlete" and the "most popular student" over the "brilliant student" and acts as a restraint to academic achievement:

> In every school the boy named as best athlete and the boy named as most popular with girls was far more often mentioned as a member of the leading crowd, and as someone to 'be like,' than was the boy named as best student. And the girl named as best dressed, and the one named as most popular with boys, was in every school far more often mentioned as being in the leading crowd and as someone to 'be like,' than was the girl named as the best student.[1]

That these forces operate in the academic milieu is attested by other voices. Rezler[2] found that poor achievers in college do not value education as such, but think in terms of the prestige and higher income it brings. They show little desire for intellectual attainment; to "get through" college is their goal. Their parents lack clear-cut value systems to pass on to the children.

Thistlethwaite[3] describes the effects of social recognition on those who attained outstanding scores on the National Merit Scholarship Test. The commendation was observed to increase the number of these youths planning to seek advanced degrees and to become college teachers or scientific researchers. Thus, the social attitude toward scholarship is an important element in student performance.

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[1] J. S. Coleman, "The Adolescent Subculture and Academic Achievement," American Journal of Sociology, LXV (January, 1960), 344.

[2] Agnes G. Rezler, "Personal Values and Achievement," Personnel and Guidance Journal, XXXIX (October, 1960), 137-43.

[3] Donald L. Thistlethwaite, "Effects of Social Recognition upon the Educational Motivation of Talented Youth," Journal of Educational Psychology, L (June, 1959), 111-16.

D. The Influence of the School

The school itself, a miniature social system, influences student behavior and may produce or encourage underachievement.[1]

Drews[2] suggests that schools contribute to poor achievement through inadequate curriculum, poor teaching, low expectations, lack of individual attention, and an unchallenging intellectual climate. Others mention excessive teacher authoritarianism, over-emphasis on routine work and memorization, suppression of intellectual curiosity, and extreme competition for grades and honors. Coleman[3] warns that the school must not permit the adolescent subculture to divert energies away from academic work and into athletics and social activities. Thus, the incidence of underachievement varies with the nature of the school's program and the quality of its instruction.[4]

Some provocative studies suggest that an important element in underachievement lies in the teacher's reaction against personalities and attitudes dissimilar to his own. Cramer,[5] for example, found that teachers perceive brightness in conformity and academic achievement only. Battle[6] found that achievers were more like their teachers than were non-achievers. As Kehas remarks:

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[1] F. J. Ryan and J. S. Davie, "Social Acceptance, Academic Achievement and Academic Aptitude Among High School Students," Journal of Educational Research, LII (November, 1958), 101-06.

[2] Drews, op. cit.

[3] Coleman, op. cit.

[4] Strang, op. cit.

[5] Charles N. Cramer, "An Inquiry into Teacher and Superior Pupil Perceptions of Brightness Roles" (unpublished Ed.D. dissertation, University of Maryland, 1957).

[6] H. J. Battle, "Relation of Personal Values to Scholastic Achievement," Journal of Experimental Education, XXVI (September, 1957), 27-41.

> The challenging question raised here is to what extent do teacher preferences for certain 'personality orientations' influence the academic performance of their students? Are our classrooms characterized by certain value expectations which severly impinge on potential achievement? Is it possible for only certain 'types' of students, regardless of intelligence or ability, to be successful in school? The problem of underachievement is not with the student _per se_ but has implications for the nature of schools, schooling, and more directly, classroom atmospheres.[1]

IV. HELPING THE UNDERACHIEVER

Educators would probably agree that the purpose of the many descriptive and causative researches should be to gain insights into ways to help the underachiever. Nevertheless, more attention has been given to description than to therapy, it being easier to diagnose than to cure. A condensation and summary of these studies appears in Table 1.

A. The Problem of Change

There is ample evidence that changing this pattern of behavior is not a facile undertaking. Drews[2] calls academic underachievement a recognizable entity in elementary school and a relatively inaccessible pattern by the time the student reaches high school. Fliegler[3] feels that by the fifth grade it is too late to reverse this behavior. It has been found

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[1] Kehas, _op. cit._, 7.

[2] Drews, _op. cit_.

[3] Fliegler, _op. cit_.

TABLE 1

SUMMARY OF PRINCIPAL CHARACTERISTICS OF UNDERACHIEVING STUDENTS AS REPORTED IN RESEARCH STUDIES

Area	Findings
I. Mental Health	Maladjustment suspected element in poor performance (Anderson '54); underachievement among brilliant students a symptom of personality problems (Horrall '57); better performance among better adjusted pupils (Hoyt and Norman '54; Pierce '59).
II. Personality Traits	Need for Nurturance, Affiliation, Change (Gebhart and Hoyt '58); callous, self-centered (Morgan '52); covert hostility (Kimball '53; Kirk '52); passivity, resentment toward authority figures, resistance to demands (Fliegler '57; Shaw and Grubb '58); denial of limitations (Berger '61; Heath '59).
III. Interests and Plans	Prefers non-intellectual, motor activities, tinkering, constructing (Kurtz and Swenson '51; Lewis '41; Pearlman '52); hedonistic, interested in sports, opposite sex, "escape" activities (Duff and Siegel '60; Gerberich '41; Middleton and Guthrie '59; Williams '62); high Kuder scores in Mechanical and Artistic (Frankel '60); immature goal choices, unrealistic vocational aims, less desire for higher education (Bagford '60; Ford '57; Gruff '57; Kurtz and Swenson '51).

TABLE 1--*Continued*

Area	Findings
IV. Self Concept	*Self concept unlike that of high achiever; feels less positive about self; sees self as less adequate* (Gough '53; Kehas '63; Pierce '59; Shaw, Edson and Bell '60); *self concept needs related to achievement* (Roth '59).
V. Relation to Parents	*Family characterized by conflict, rejection, lack of affection* (Anderson '54; Richmond '59; Watson '60); *less identification with parents* (Bristow '59); *parents inept, inconsistent, act out own needs on child* (Barrett '57; Drews '61; Tibbetts '54; Williams '62); *father dominant, rejecting; poor father-son relationship* (Kimball '52; Pierce '59; Rosen '56).
VI. Relation to School and Teachers	*Negative attitude toward school, critical of methods, unwilling to conform to routines* (Barrett '57; Brown, Abeles, and Iscoe '54; Granzow '54; Lum '60); *does not relate well to teachers, has different attitudes and values* (Battle '57; Ford '57; Golburgh and Penney '62; Kehas '63; Pippert and Archer '63; Williams '62); *does not prepare for class, procrastinates, rationalizes, is unable to concentrate* (Boyce '56; Brown, Abeles, and Iscoe '54; Dowd '52; Gerberich '41; Kirk '52; Stover '56).

in boys as early as the first grade.[1] Students whose achievement is poor in elementary school do worse in secondary school;[2] those with low academic standing in secondary school remain low in college.[3] Easy optimism about solutions is unwarranted. Underachievement is not a surface phenomenon; it is related to the basic personality matrix of the individual.[4]

B. Individual Counseling

Counseling is frequently recommended as logical treatment for the underachiever on the theory that unresolved conflicts interfere with the individual's ability to utilize his talents. Roth,[5] for example, characterizes poor academic achievement as a psychopathological organization closely resembling depressive disorders. He then suggests counseling as a psychotherapeutic approach to interrupt the processes which reinforce the non-achievement. Golburgh and Penney,[6] attempt what they consider a more feasible tactic: "sector counseling." This is a deliberate focusing on the difficulty, which is usually verbalized as inability to study.

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[1] Merville Shaw and J. T. McEven, "The Onset of Academic Underachievement in Bright Children," Journal of Educational Psychology, LI (June, 1960), 103-108.

[2] Barrett, op. cit.

[3] Dowd, op. cit.

[4] Shaw and Brown, op. cit.

[5] Roth and Meyersburg, op. cit.

[6] Golburgh and Penney, op. cit.

The research devoted to the effect of counseling on academic performance does not promote optimism. Patterson,[1] studying veterans enrolled in an industrial school, found no difference between counseled and non-counseled groups on the basis of either persistence in training or grade point average. Again, Guthrie and O'Neill[2] assessed the effectiveness of the dormitory counselor with respect to academic performance. Comparing a group of college freshmen whom the counselor had attempted to help with an equated group that had received no attention, they found that the activity of the counselor had no effect on the achievement of the students.

There are two studies aimed at using counseling to improve the performance of underachieving students. Calhoun[3] used a kind of advisory counseling with eighth grade students whose achievement was below expected level. He interviewed the students, pointing out the lag in their performance and helping them formulate reasons for the poor progress. Trying not to impose his suggestions, he encouraged the student to consider what steps to take. There was some parental contact, as well as help to the students in working out plans for self-improvement. As a result of this treatment, the experimental group exceeded the controls on an achievement battery, though the difference was not significant.

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[1] C. H. Patterson, "A Comparison of Counseled and Non-Counseled Industrial School Students," Journal of Applied Psychology, XLI (August, 1957), 240-42.

[2] George M. Guthrie and Harry W. O'Neill, "Effects of Dormitory Counseling on Academic Achievement," Personnel and Guidance Journal, XXXI (February, 1953), 307-09.

[3] S. R. Calhoun, "Effect of Counseling on a Group of Underachievers," School Review, LXIV (October, 1956), 312-16.

Another example, this one called "motivational counseling," made a direct attack on the problem by counseling underachieving students and their parents on the importance of good marks and by supplying how-to-study advice.[1] This group improved significantly; the correlation between I.Q. and grade point average increased from .57 to .76.

These two studies suggest that marks may be a more sensitive barometer of change than scores on standardized tests. Both writers note vague realization of the child's potential by both student and parent. They stress the importance of a raised level of expectation and a better schedule of study time. Neither are rigorous, well-controlled experiments. They are not so much studies of counseling as of the effect of individual attention and better parental supervision.

Baymur and Patterson[2] examined the effectiveness of different types of counseling in dealing with underachievers. Thirty-two high school students were divided into four equated groups and provided four different treatments: individual counseling, group counseling, one-session "motivational" counseling (students were told they were underachieving and urged to do better), and no-contact controls. The experiment was conducted for twelve weeks, and its effects were judged in terms of personal adjustment, attitudes, study habits, and grades. Results, though not clear cut, point to improvement in the counseled groups. These showed greater positive change in self concept and improvement in grade point average.

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[1] H. F. Serene, "An Experiment in Motivational Counseling," Personnel and Guidance Journal, XXXI (February, 1953), 319-24.

[2] F. B. Baymur and C. H. Patterson, "A Comparison of Three Methods of Assisting Underachieving High School Students," Journal of Counseling Psychology, VII (Summer, 1960), 83-89.

C. Group Counseling

Group counseling appears to be appropriate for the underachiever, who craves peer approval, and who fears that his ideas may be atypical. The results of experiments, however, leave the status of group counseling in doubt.

Winborn and Schmidt[1] made the startling discovery that college freshmen who did not participate in a program of short-term group counseling made higher grade point averages than did the participants. In addition, neither group differed in pre- and post-scores on the California Psychological Inventory. McDaniel and Johnson[2] conducted group counseling with 10 achieving and 10 underachieving eighth grade students over a period of twelve weeks. The students felt there was value in learning that others had problems, and the teachers felt that students gained in ease of expression. The group sessions may have contributed to improvement in academic achievement and citizenship, but the authors do not furnish statistical data.

A more scientific design was constructed by Broedel and others[3] who assumed that group counseling would improve the underachiever's self-acceptance and ability to relate to others. Since negative feelings interfere with efforts to help them, this might be a step toward academic improvement.

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[1] Bob Winborn and Louis G. Schmidt, "The Effectiveness of Short-term Group Counseling Upon the Academic Achievement of Potentially Superior but Underachieving College Freshmen," Journal of Educational Research, LV (December-January, 1962), 169-73.

[2] Harold McDaniel and Boyd A. Johnson, "Effect of Group Counseling on Achievers and Under-Achievers," Journal of Secondary Education, XXXVII (March, 1962), 136-39.

[3] Broedel, op. cit.

The ninth grade students met for one class period, twice a week, for eight weeks. The results of this counseling were definite gains in acceptance of self and others, as well as movement closer to a "model-of-adjustment" concept. Grades, however, failed to improve. A side effect of the group counseling was increased assertiveness and independence, which created problems at home and in the classroom.

Sonstegard[1] conducted group counseling with the parents of elementary school underachievers. If children's lack of success in school is directly related to interaction patterns with the parents, it would be most profitable to attack the situation through the parents. The results support his hypothesis, for the children whose parents were involved in the counseling made significant gains in achievement test scores.

Group counseling, though not a panacea, shows promise for the ailing student. In some cases, the experience affects the student's self concept; in others, his academic achievement. Further research may help to develop the guide lines for use of this potentially valuable technique.

D. Alteration of School Practices

To what extent can changes in usual school procedures help the underachiever? A novel approach was tried at the DeWitt Clinton High School in New York City.[2] It was felt that if underachievers could be grouped together to share common problems and receive support from a sympathetic teacher, their attitudes and scholastic performance could more readily be improved.

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[1] Manford Sonstegard, "Effects of Group Counseling of Parents Upon the Performance of Underachieving Elementary School Children," Paper read at APGA Convention, Chicago, Illinois, 1962.

[2] Goldberg and Passow, op. cit.

The researchers identified 70 tenth graders who had I.Q.'s of 120 or above and a ninth grade average below 80. Half of these, the experimental group, were programmed together in homeroom and social studies with a selected teacher sensitive to them. Attention was given to guidance needs and to basic skills and work habits. At the end of the year, the experimentals showed definite progress, exceeding the controls in nearly every area.

This experiment disclosed clues to handling underachievers: Only particularly understanding and patient teachers are able to be effective with a group of this kind. Despite the success, there was a feeling that grouping might be unwise, for the students give each other negative support.

Karnes[1] evaluated another technique in grouping. In an elementary school, he assigned 25 underachieving gifted children to homogeneous classes with intellectually gifted high achievers. A comparable group of underachieving gifted children were placed in heterogeneous classes with pupils of varied intellectual ability. It was expected that the academic achievement of the subjects in the homogeneous group would be greater because of contact with stimulating ideas and pressure to aspire to higher goals. This hypothesis was supported. There was improvement in creativity as well. These results imply placing underachievers among gifted students has merit.

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[1] Merle B. Karnes et al., "The Efficacy of Two Organizational Plans for Underachieving Intellectually Gifted Children," Exceptional Children, XXIX (May, 1963), 438-46.

Others have suggested tactics that might help.[1, 2, 3, 4] The school is urged to try to build up the underachiever where he has a real chance of success--in athletics, music, a hobby, academic work. Attention should be given to the anxieties that plague the adolescent boy. The underachiever is a person for whom the school should find a place in activities which will enlarge his sphere of social activities and build a feeling of self worth.

E. Teaching Techniques

Teachers themselves often try various tactics to improve the performance of their students. Some of these have been systematically evaluated.

One is the teacher-student interview, which is frequently recommended, since the personal attention might spur achievement. Sherriffs[5] assessed the value of conferences with the members of a college psychology class. Thirty-four students were selected as experimentals and were given a sixty minute individual interview. Their academic performance improved over that of the rest of the class. Some students improved more than others; the interview seemed to have more effect on those who had a higher degree of tension and a greater need for praise and affection.

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[1] Bristow, op. cit.

[2] Drasgow, op. cit.

[3] Gowan (1955), op. cit.

[4] Williams, op. cit.

[5] Alex C. Sherriffs, "Modification of Academic Performance through Personal Interview," Journal of Applied Psychology, XXXIII (August, 1949), 339-46.

In a like design, Moore and Popham[1] divided a college class into three groups. One group was interviewed in a "content-centered" manner, another in a "student-centered" manner (discussion of psychological concepts as they apply to the particular student), and the third group was not interviewed. No group differed significantly from another in final grades. However, the student-centered interview promoted gains in the non-intellectual factors associated with academic success, whereas the content-centered interview did not.

It appears that the type of interview and the personality of the student are variables which influence the outcomes of pupil-teacher conferences. Hoehn and Saltz[2] observed that teacher-student interviews seemed to decrease the failure rate for "anxious" students, but to increase the rate for "rigid" students.

Stamatakos and Shaffer[3] experimented with another teaching plan: special attention and enrichment for a group of potentially superior students. The female freshmen, who had scored at or above the 85th percentile on ACE, were exposed to a program of enrichment consisting of a carefully planned sequence of letters from professors, lectures, banquet speakers, reprints of articles, and study materials. This differential treatment did not produce any significant differences over the controls in either academic achievement or extracurricular participation.

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[1] Mary R. Moore and W. James Popham, "Effects of Two Interview Techniques on Academic Achievement," Journal of Counseling Psychology, VII (Fall, 1960), 176-79.

[2] A. J. Hoehn and Eli Saltz, "Effect of Teacher-Student Interviews on Classroom Achievement," Journal of Educational Psychology, XLVII (November, 1956), 424-35.

[3] L. C. Stamatakos and R. H. Shaffer, "Effects of Special Attention upon Potentially Superior Freshmen Students," Personnel and Guidance Journal, XXXVIII (October, 1959), 106-11.

Whiteis[1] describes an experience with therapeutic teaching. Whiteis notes two opposing interpretations of the reasons for poor scholarship in college: (1) the "interference-effect" interpretation--that immature emotional reactions act as a block to the attainment of academic goals, and (2) the "lack of disciplined intelligence" interpretation--that students have been given faulty pre-college training and have not been taught to think. He then selected two freshmen psychology classes. In one, the Therapy Group, he attempted to use the techniques of non-directive counseling, such as acceptance and understanding, and to avoid the coercing, forbidding, coaxing, *etc.*, which invoke maladjustive behavior in students who suffer from unresolved conflicts. Expressed student concerns led to areas of inquiry. The text was used as a tool for elucidation of psychological concepts. Teacher assigning and memorization were avoided. The other, No Therapy, class was taught by the traditional, teacher-directed method.

Whiteis hypothesized that if attempts to inject therapy into education further dilute the work of the school (as the "lack of disciplined intelligence" interpretation asserts), then the Therapy Group should do less well academically than the No Therapy Group. If, on the other hand, the therapeutic teaching method helps to free learning, then the Therapy Group should show better performance.

The results support this latter interpretation; the students in the Therapy Group achieved significantly higher class grades. In addition, they became warmer to each other and to the instructor. There were more student-initiated private conferences. The attendance of the Therapy Group was superior, they exhibited less forgetting, and their subsequent retention rate in college was higher. This evidence consistently confirms the interference-effect interpretation and points up the potential value of non-directive, therapeutic teaching.

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[1] U. E. Whiteis, "Poor Scholarship in College," *Harvard Educational Review*, XXXII (Winter, 1962), 3-38.

Sheldon and Landsman[1] had essentially the same result in the use of a non-directive teaching method for college students in academic difficulty. It appears, then, that a class that is conducted in a non-threatening, student-centered manner is of value to those students whose potential accomplishment is hampered by emotional conflict.

V. CONCLUSIONS

From this body of literature, certain conclusions may be drawn which are pertinent to the present study:

A. The underachiever has distinctive personality characteristics.

Study after study, using standardized instruments, checklists, or questionnaires, has found differences between the able high achiever and the able low achiever. The underachiever has his own personality organization and unique needs. His self concept is different from that of the high achiever. There may be an element of maladjustment; usually there is strong hostility toward adult authority. Even his pattern of interests, goals, and activities are peculiar to him.

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[1] William D. Sheldon and Theodore Landsman, "An Investigation of Nondirective Group Therapy with Students in Academic Difficulty," Journal of Consulting Psychology, XIV (June, 1950), 210-15.

B. The underachiever's personality brings him into conflict with the teacher.

It is precisely this unique personality that promotes the underachiever's trouble in school. The traditional teacher becomes a target for aggressive tendencies which are denied overt expression. The conflict, which apparently stems from the parents, is acted out with the parent-surrogate teacher, expressed as pervasive resistance to demands.

Thus, rigid school procedures feed and encourage the problem. The underachiever does not make adequate preparation; he does not strive to please the teacher. His attitudes and values are unlike those of the typical teacher. The underachiever is critical of teacher method and of school rules and procedures generally.

He is, therefore, rejected by the school, openly or subtly. He suffers by comparison to the approved, conforming high achiever. The underachiever's failure to perform expresses and reinforces his feelings of inadequacy.

C. An acceptant teacher can be more effective with the underachiever.

The characteristics of the underachiever hamper his performance in the traditional classroom. Other types of personalities are more successful, more rewarded by the teacher. Yet, learning does occur. Achievement tests frequently show the so-called underachiever to rank as high in academic skills as the high-achieving student.

Several researches imply that more flexible classroom procedures and more accepting teachers enable the underachiever to function more effectively. Teacher-student interviews have been found to promote gains in adjustment and grades. Grouping underachievers with a patient teacher helped to improve performance.

But especially noteworthy are the efforts to conduct a class in a non-directive manner. These studies suggest that the non-authoritarian teacher can avoid the dependence-independence conflict which binds the energies of the underachiever.

D. A teacher who knows more about his students tends to be more accepting toward them.

Three different studies indicate that as teachers have more information about their students the teacher-pupil relationship is changed. Teachers reported different attitudes toward the child after knowing more about him, and students showed gains in grades, attitudes, and teacher ratings. Perhaps most significant, the students rated their teachers more favorably.

These results suggest that giving the teacher more information about pupils makes him more understanding and accepting toward them. As a result, student attitudes and performance are enhanced. Thus, one approach for working with the underachieving student would be to help the teacher to know more about him.

VI. STUDIES RELATED TO THIS RESEARCH

There are three studies which relate closely to this research. Each of these is concerned with the effects of supplying pupil information to teachers, but none deals specifically with the underachieving student.

Ojemann and Wilkinson[1] stress the need for teachers to know more about students to create effective learning situations and to watch for beginnings of personality disorders. They created two groups of 33 ninth grade pupils, equated in terms of school achievement, attitudes, personality conflicts, and certain ratings of pupil adjustment.

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[1] Ojemann and Wilkinson, op. cit.

Personality and environmental data were gathered. The investigators summarized facts and added their interpretation. This was transmitted to the teacher in an interview. The teachers were given suggestions for using the information and handling individual children.

This study lasted from fall until spring. Results show that experimentals gained significantly in grades, attitudes, lowering of personality conflicts, and teacher ratings. The authors conclude that when teachers learn to know their pupils as personalities in their respective environments teachers tend to become more effective guides for learning.

Sturgis[1] studied a college population to determine the extent to which the effectiveness of teaching is related to the teacher's knowledge of the student's background. The investigation involved six groups of students in the School of Physics at Georgia Tech. Each of three teachers taught two groups of students. The single independent variable was the information of the personal backgrounds of the students in the experimental group.

The results were evaluated by a faculty evaluation form, which the students completed, and by a standardized physics test. Sturgis found that the experimental students made significantly greater gains in achievement and also rated their teachers significantly higher as instructors. He concludes that a knowledge of the personal backgrounds of students is an important element in effective teaching.

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[1] Sturgis, op. cit.

Hoyt[1] worked with eighth grade students. He arranged three treatments: N--the teachers were given no information about students, T--the teachers were given test scores only, TO--the teachers were given test scores plus other data obtained from a questionnaire. These were arranged for three sections in two schools so that each of six different teachers used the treatments alternately in English, math, and social studies classes.

Results were assessed by an achievement test and a student reaction inventory. Hoyt found no significant differences in achievement in any of the groups. He did find, however, that an increase in teacher knowledge of pupils improved pupil attitudes toward teachers.

On the basis of these three studies, it appears that the teacher who knows more about his students may be more effective in dealing with them. Gains are shown in achievement, both as measured by grades and by standardized tests, and in attitudes toward the teacher.

These studies strongly recommend this tactic in working with the underachiever. If the teacher can be made more understanding and accepting toward this student, it may be possible to help him improve his performance. The study reported here is, so far as can be determined, the first one to examine the effect of pupil information on teachers of high-potential, low-achieving secondary school students.

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[1] Kenneth B. Hoyt, "A Study of the Effects of Teacher Knowledge of Pupil Characteristics on Pupil Achievement and Attitudes toward Classwork," Journal of Educational Psychology, XLVI (May, 1955), 302-10.

CHAPTER III

DESIGN OF THE STUDY

I. RATIONALE OF THE STUDY

The survey of previous research points up certain techniques which the guidance worker might employ in an attempt to improve the scholastic performance of underachieving students:

First, despite frequent recommendations, counseling has not been shown to be particularly useful in this attempt. Individual counseling, especially, severely limits the number of students with whom the counselor may work.

Second, it appears that one of the most powerful forces blocking the performance of the underachiever is his antipathy toward the conventional classroom. He is frequently antagonistic toward the teacher and critical of educational methodology. Furthermore, he is hampered by a conception of himself as a poor student.

Changed patterns of classroom control seem to reduce his hostility and free his learning ability. However, the school counselor typically is not able to change teaching practices or to originate special classes. It is more feasible for the counselor to seek to change the ways in which the teacher and underachieving student perceive each other.

Most pertinent here are the researches which show change occurring as the result of more student information being given to the teacher. These studies suggest that information changes the way the teacher reacts to students, for the results show both improved student performance and more favorable ratings of teachers by the students.

This technique suggests itself as a valuable one for the counselor to use in working with underachieving students of high ability. That is the purpose of this present research.

This study is designed to evaluate the effects of supplying teachers with personal information about high-potential, low-achieving secondary school students. In four Detroit high schools, students who fit the operational definition of high potential and low achievement were identified. Pupil information, gathered chiefly by means of a questionnaire constructed for this purpose, was distributed to the teachers of members of the experimental group. This treatment, begun in the 10A, was continued for five semesters, until the expected time of graduation.

The effects of this experiment were assessed on the basis of comparisons between experimentals and no-treatment controls, using such measures as standardized achievement tests, grade point average, and a self concept index.

II. DEFINITION OF HIGH-POTENTIAL LOW-ACHIEVING

One of the first problems of this research was the need for an accurate and defensible definition of the phenomenon to be investigated. After studying previous research and examining student records, it was decided that for purposes of this project a student would be considered high-potential low-achieving if he scored in the top quartile on the 10B School and College Ability Test, total score, and if his 10B grade point average for academic subjects was 2.0 (C) or lower. Thus, the criteria consists of an aptitude test as a measure of ability and teacher marks as an index of achievement.

Since this study was concerned with poor achievement among able students, it seemed a logical choice to use the upper 25 per cent of the ability distribution. Those who rank in this quartile have customarily been considered scholastically talented and able to profit from higher education. A recent statement from the Superior and Talented Students Project confirms this:

> Although the superior student can be defined in a variety of ways, in this book any student who scores in the upper 25 per cent of the secondary school population on national norms on a test of mental ability is considered to be superior.[1]

Those who have investigated underachievement have frequently pointed to this same population. Shaw, for example, states:

> In most school situations, the selection of a group of underachievers from the top quartile with respect to ability is probably the most defensible procedure.[2]

Studies of underachievement typically use teacher-assigned marks rather than a standardized test as the measure of achievement, for it is here that the discrepancy between ability and accomplishment shows most clearly. A common research experience has been to find that students classified as underachieving on the basis of marks achieve as well as high achievers on standardized tests.[3]

The typical underachiever learns; it is classroom non-performance that produces the poor marks and creates the problem.

The importance of marks cannot be dismissed by references to their subjective and unreliable characteristics. The marks a student earns assume great significance in his life. Parents, friends, teachers, employers--all judge school progress from marks. The school itself uses marks, not achievement test scores, as the basis for awarding honors and scholarships. Marks form the major part of the child's permanent school record and are used to compute rank in class. Colleges request this data for each applicant. Indeed, they consider marks most predictive of future scholastic success.

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[1] Frank S. Endicott, Guiding Superior and Talented High School Students (Minnesota: STS Project, 1961), 1.

[2] In Miller, op. cit., 17.

[3] See, for example, Pippert and Archer, op. cit.

Therefore, grade point average was used to judge the student's level of performance. The selection of a specific grade point must be somewhat arbitrary, however, for there is no exact point at which a student may be said to be underachieving. In discussing this point, Shaw recommends considering a child an underachiever if he is in the upper 25 per cent in regard to intellectual ability and his grades fall below the class average.[1]

To facilitate this research, low achievement for the high ability group was defined as a grade point average for the 10B semester of 2.0 (C) or lower, for it was impractical to attempt to compute an average for the entire class. It appeared to be justifiable since students in the top quartile in aptitude are usually considered capable of the 3.0 (B) average required by many colleges.

In computing this average, only academic subjects were used, i.e., English, social studies, math, language, science. These are five-hour subjects; they meet daily and require preparation outside of class. Non-academic subjects and electives, i.e., art, music, gym, typing, drafting, etc., were not included. Marks in these areas tend not to be representative of those in academic work.

If this selection criteria lacks statistical sophistication, it has the advantages of simplicity and useability. One of the aims of this study was to develop techniques which teachers and counselors could use in working with underachievers. Some of the complex procedures used by researchers are completely inappropriate for use by school personnel who are not statisticians and who have limited time for this extra duty.

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[1] In Miller, op. cit., 18.

This is a common sense selection technique which teachers can understand and use. The necessary data are readily available from the student's record card. In addition, it is a tool that can be used after the first semester, making it possible to begin working with the poor achiever early in his high school career.

III. SELECTION OF SCHOOLS

The next phase of this project consisted of selecting the schools to be included. Using the prescribed definition, the records of tenth grade students in several Detroit high schools were examined to determine if adequate numbers of high-potential low-achievers could be found. The District Administrator of each of the nine administrative districts was asked to nominate a high school in his district that would be willing to participate in the research.

Examination of student records revealed that in some schools large numbers of high-potential low-achievers could be found, while in others very few fit this definition. Generally, our criterion selected students in the more academic high schools in stable, white, middle-class sections of the city. Relatively few were found in the predominately lower socioeconomic areas served by inner-city schools.

IV. DESCRIPTION OF THE SCHOOLS

After preliminary investigation at several schools, it became apparent that four of the high schools would provide adequate numbers of students for this research. These four schools, serving different populations in different parts of the city, seemed to insure fair representation of the kind of student that was to be studied.

The following description of the schools comes from many sources: data from the Department of Instructional Research, conversations with school administrators, contact with students and teachers, examination of student records and questionnaire responses. More subjective reactions result from the time the writer spent in these schools during the course of this study and from his previous twelve years experience in the system.

First, all are large, urban high schools. One is a specialized school; the other three are neighborhood comprehensive high schools. The specialized school is in the center of the city; the other three are near the outskirts. Each is in a different administrative district. The three comprehensive high schools have very similar curricular offerings. The specialized school has these same subjects, plus a much wider range of technical offerings, especially in science, technical work, art, and music.

All four schools rank near the top of the ability distribution as judged by test results. The Department of Instructional Research compiled a rank-order list of the 22 Detroit high schools on the basis of mean scores on the 10B _School and College Ability Test_ administered in the fall of 1961, the time that this study began. The results are as follows:

TABLE 2

THE RANKING OF 4 SELECTED DETROIT HIGH SCHOOLS ON 10B SCAT SCORES

School	Rank
A	2nd of 22
B	5th of 22
C	1st of 22
D	7th of 22

Another factor of significance about a school is the percentage of its graduates who attend college. Information is available from an analysis of Form 1038, Student Information Record, completed by 12A's in January, 1964. Post-high school plans give the following data:

TABLE 3

PER CENT OF GRADUATES OF 4 SELECTED SCHOOLS WHO PLAN TO ENTER COLLEGE

School	Per Cent
A	42%
B	38%
C	70%
D	24%

A brief description of each school will help to illustrate the kind of student population that was the subject of this investigation:

School A -- This is a very large school, an old eight-story building in the center of the city. The 4,000 students come from all parts of the city. Many travel great distances and endure real hardships to attend this school. They come because of the specialized offerings or, in some cases, for prestige.

This is not a comprehensive high school. It maintains a minimum ability requirement for admittance. Many students who are unsuccessful here are returned to their neighborhood school. Since 1957, this school has offered a special enriched curriculum for gifted children called the Science and Arts Program. Students who score in the upper 3 per cent on eighth grade city-wide tests are invited to enroll in this program.

The building has a highly academic atmosphere. It has an extensive offering of technical subjects and an outstanding art and music program. This school has more National Merit Scholarship Award finalists than any school in the city.

The student body is cosmopolitan. There are more orientals in this school, more foreign born, more middle- and upper-class Negroes. They are for the most part eager, bright, conscientious students who choose (or whose parents choose) to attend a difficult school. This is one of the few city schools where large numbers of students carry briefcases.

School B — This is generally considered one of the better academic high schools in the city. It is a neighborhood, comprehensive high school, currently enrolling about 3,000 students.

This school serves one of the better neighborhoods of the city. Much of the district consists of brick, colonial homes on wide, tree-lined streets. Virtually no Negroes attend the school; none live within the district boundaries.

This school has recently begun to offer a Science and Arts curriculum modeled after that of School A and partly aimed to prevent the drain of talent by School A. Very often, students from this school appear as winners in creative writing contests or the science fairs.

School C -- This school is very much like School B--a comprehensive high school of about 3,000 students serving an above average neighborhood. The important difference is that this student population is predominantly Jewish.

The teachers in this building find the majority of their students almost aggressively eager to accomplish at a high level. They are well informed and highly vocal. Most display a wide range of interests, including current events, philosophy, art, music, the theater. They are well dressed and affluent.

Most of these students are headed for college. The trade program in this school is very limited because of the lack of student interest. The school offers a Science and Arts curriculum to the top 3 per cent of the ability distribution.

This school has a small Negro population, less than 10 per cent, drawing from a small community near the city boundary. This proportion is increasing; the neighborhood is changing.

School D -- This is the largest secondary school in Detroit; it enrolls over 4,000 pupils. The neighborhood it serves is a step down the socio-economic ladder from that of School B or School C. The homes are smaller and there are more multiple dwellings. A government supported housing project lies in this district.

The parents of these students are for the most part machinists or skilled tradesmen. Many are employed by the city's automobile factories. There is no Negro district in the area of this school.

As compared to Schools A, B, or C, the students of School D are noticeably less academically oriented. There are fewer college-bound students; the trade program is heavier. There were no National Merit Scholarship Award finalists in 1963.

The students here look somewhat less affluent. Their dress is poorer. They display some of the lower class antagonism toward school. Often groups of students may be seen loitering and smoking in front of the building. Boys and girls alike seem highly interested in cars.

The sample of students for this experiment was selected from the population of these four schools.

V. SELECTION OF SAMPLE

In January, 1962, it was possible to examine the results of the School and College Ability Tests which had been administered to the 10B students in the fall of 1961. (The STEP-SCAT series is routinely administered to all Detroit 10B's twice each year.) There were 3,478 students who had taken these tests in the four selected schools.

According to the Manual for SCAT, the upper quartile for the Total Score, Grade 10, fall testing, is marked by a converted score of 290. All those who scored above 290 were, therefore, selected as high-potential students. There were 1,640 students so categorized.

TABLE 4

NUMBER OF STUDENTS IDENTIFIED AS HIGH-POTENTIAL

School	No. Tested	No. Above 75 %'ile	% Above 75 %'ile
A	983	516	52%
B	704	281	40%
C	979	551	56%
D	812	292	36%
Total	3,478	1,640	47%

In January, 1962, these students completed their 10B semester, for most of them their first semester in high school. It then was possible to compute the 10B grade point average of these 1,640 high-potential students.

This was computed on the basis of A = 4, B = 3, C = 2, D = 1, E = 0, using academic subjects only. Those whose grade point average for the 10B semester was 2.0 or less were considered low achievers. A total of 580 students were so designated.

TABLE 5

NUMBER OF HIGH-POTENTIAL STUDENTS
IDENTIFIED AS LOW-ACHIEVING

School	No. High-Potential	No. Low-Achieving	% Low-Achieving
A	516	143	28%
B	281	102	36%
C	551	193	35%
D	292	142	48%
Total	1,640	580	35%

It can be observed from Table 5 that the degree of poor achievement is lowest in School A, which, as a specialized school, caters principally to students who are academically oriented and can transfer non-performing students to other schools. School D, on the other hand, which appears to be much less academic, shows a higher degree of low achievement.

The figures also disclose that most of the upper quartile students, about two-thirds of them, perform above a C level during their 10B semester. However, in these four schools, about one-third of the able students are underachieving according to the definition of this research.

This group of 580 high-potential, low-achieving students became the sample of students selected for this experiment. A mean grade point average and a mean SCAT total score was computed for each school. The results show the groups in each school to be quite similar.

TABLE 6

MEAN GRADE POINT AVERAGE
AND MEAN SCAT TOTAL FOR EACH SCHOOL

School	No. High-Potential Low-Achievers	Mean G.P.A.	Mean SCAT Total
A	143	1.59	296.9
B	102	1.54	295.9
C	193	1.47	296.5
D	142	1.43	295.2
Total Mean		1.50	296.1

Thus, as a group the high-potential, low-achieving students have a mean aptitude test score of 296, which is above percentile 85, and a mean grade point average of 1.5, which ranks midway between C and D.

VI. DATA COLLECTION

Several instruments were used to obtain data about the students and to evaluate the effects of the experimental technique.

A. Aptitude

The instrument used to measure scholastic aptitude was the School and College Ability Tests (SCAT), published by the Cooperative Test Division of Educational Testing Service. Level 2, Form A of this test is administered to 10B students, and Level 2, Form B, to 12B students in Detroit schools as part of the Senior High School Guidance Testing Program.

The Manual describes the test as follows: "The School and College Ability Tests (SCAT) aid in estimating the capacity of a student to undertake the academic work of the next higher level of schooling. They measure the two kinds of school-related abilities which are most important in the greatest number of school and college endeavors--verbal and quantitative."[1]

SCAT was designed to measure specific developed abilities rather than abstract, hard-to-explain psychological traits, and to measure those abilities which many investigators of educational aptitudes have found to be most closely related to success in school learning.

Three scores are reported: a Verbal score, a Quantitative score, and a Total score. These scores are reported in two ways: as a 3-digit converted score, useful in statistical operations, and as a percentile band. These bands are used because student scores on any test would vary if they took parallel forms of the same test on successive days or if they took alternate forms of the tests. The percentile band represents a confidence interval, computed from the standard error of measurement.

The 10B SCAT was used as a criterion for selecting high-potential students for this research.

B. Achievement

The instrument used to measure scholastic achievement was the Sequential Test of Educational Progress (STEP). The STEP series, as used in Detroit, is composed of six achievement tests covering the following major areas of school instruction: Reading, Writing, Listening, Social Studies, Mathematics, and Science.

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[1] Cooperative School and College Ability Tests, Manual for Interpreting Scores (Princeton: Cooperative Test Division, Educational Testing Service, no date).

These tests aim to measure the broad outcomes of general education, rather than the relatively narrow results of any specific subject matter course. STEP focuses on skill in solving new problems on the basis of information learned, rather than on ability to handle only lesson material.[1]

These scores are reported in the same way that SCAT scores are reported.

Level 2, Form A, of this series is routinely administered to 10B students, and Level 2, Form B, to 12B students in Detroit schools as part of the Senior High School Guidance Testing Program. This made it possible to use the 10B series as a pre-test and the 12B series as a post-test for purposes of this research.

The STEP-SCAT series is a well-known battery which has won wide acceptance as a valid and reliable measure of aptitude and achievement.

C. Grade Point Average

The student's scholastic achievement was also measured in terms of the subject marks he received. Grade point average was computed on the basis of A = 4, B = 3, C = 2, D = 1, E = 0. Only academic subjects were included.

The grade point average was computed for each student at the beginning of the study and for the five subsequent semesters, up to the expected time of graduation.

D. Personal Information

Student information was gathered by means of a questionnaire which was designed for this purpose. This questionnaire consisted of 72 items requesting information in several categories:

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[1] Sequential Tests of Educational Progress, Manual for Interpreting Scores (Princeton: Cooperative Test Division, Educational Testing Service, 1957).

1. Age, sex, place of birth
2. Home and family
3. Interests and activities
4. Relation to school and teachers
5. Future plans
6. Health
7. Self attitudes and concerns

An attempt was made to administer the questionnaire to all those who had been identified as high potential in the four schools. A total of 1,519 students completed the form.

The data obtained served two purposes. First, it supplied the student information which was distributed to teachers of the experimental group. Second, it made it possible to compare the responses of high and low achievers so that distinguishing characteristics could be noted.

E. Self Concept

The instrument used to measure self concept was the Index of Adjustment and Values, High School Form, created by Robert E. Bills of the University of Alabama. This Index was selected as suitable for use with high school students and able to be completed during a single class period. Also, this device has been widely used and has received some critical acclaim. Wylie, for example, states: "Much more information is available on the norms, reliability, and validity of this instrument than on any other measure of the self concept included in this survey."[1]

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[1] Ruth C. Wylie, The Self Concept (Lincoln: University of Nebraska Press, 1961), 70.

And another critique of self concept measurement states: "The data which have been collected from several studies indicate that the Index is a reliable and valid measure of adjustment and values."[1]

Bills based his device on the tenet of perceptional theory that behavior is consistent with the behaver's perceptions about the world in which he lives, including such factors as self concept, concept of the ideal self, acceptance of self, and beliefs about other people's acceptance of themselves. It is these variables that the Index has been designed to measure.[2]

The instrument consists of trait words selected from Allport's list of 17,953 traits. Items were chosen which occur frequently in client-centered interviews and which seem to present clear-cut examples of self concept definitions. Though research has shown the Index of Adjustment and Values a reliable and valid instrument, the level of difficulty of the words caused problems when it was used below the twelfth grade. In 1957, Bills obtained another list of traits which was refined into the High School Form of the Index of Adjustment and Values.

The High School Form is the same as the Adult except that the words are different. This, too, appears to be a reliable instrument, and it correlates highly with the Adult Form.

Basically, the Index of Adjustment and Values consists of 37 trait words which the subject uses to tell three things about himself. On the "Self" form he rates himself for each trait on a 5-point Likert-type scale telling (1) How he is in respect to the trait word; (2) How he feels about being this sort of person; and (3) How he would like to be in respect to this trait. The subject then completes the "Other" form, which is identical, except that now he completes the ratings as he thinks an average member of his group would fill it out for himself.

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[1] Donald J. Strong and Daniel D. Feder, "Measurement of the Self Concept: A Critique of the Literature," Journal of Counseling Psychology, VIII (Summer, 1961), 172.

[2] Robert E. Bills, Manual for Index of Adjustment and Values (Birmingham: University of Alabama, no date). (Mimeographed.)

This instrument obtains measures of self concept, self attitude, ideal self, and discrepancy between concept of self and concept of ideal self. From the "Other" form it is possible to obtain the subject's perception of other persons' ratings on these same variables.

The Index of Adjustment and Values was administered to 474 high-potential low-achievers and to a sample of 82 high achievers at the beginning of the experiment. It was administered as a post-test to those experimentals and controls who were still enrolled in the four schools at the end of the experimental period to assess changes in self concept.

VII. ASSIGNMENT TO GROUPS

Once the sample of high-potential, low-achieving students had been selected, they were randomly assigned to groups for differing treatments. By use of a table of random numbers, the students were assigned to three groups of approximately equal size in each school. These groups were designated Experimental, Quasi-Control, and True Control. The purpose of these groups was as follows:

Group 1 -- Experimental: The members of this group were identified to their teachers as high-potential, low-achieving students. Personal information about these students (which had been obtained from the questionnaire) was distributed to their teachers.

The teachers were urged to use the information as an aid in understanding the student and in helping him improve the level of his scholastic performance.

Group 2 -- Quasi-Control: The members of this group were identified to their teachers as high-potential, low-achieving students. However, their names were merely listed; no information about them was supplied to the teachers. (This treatment group was used in only two of the schools, A and C.)

Group 3 -- True Control: The members of this group were not identified to their teachers.

These groupings were devised to assess the effects of different experimental treatments. It was assumed that the students assigned to Group 1 would receive definite attention and might receive special help. Group 2 made it possible to evaluate the mere fact of identification, without any personal information being provided. Theoretically, the students in Group 3 received no special attention and were considered to be no-treatment controls.

TABLE 7

NUMBER OF STUDENTS ASSIGNED
TO EACH GROUP BY SCHOOLS

School	Experimental	Q-Control	Control	Total
A	48	49	46	143
B	34	--	68	102
C	63	65	65	193
D	46	--	96	142
Total	191	114	275	580

The number of students who were randomly assigned to each of the groups was as follows:

There were 191 students in the four schools who comprised the experimental group. In two of the schools, A and C, a quasi-control treatment was used with 114 students. In the other two schools, B and D, the only grouping used was experimental and control, creating a total control group of 275 students. Thus the experiment began with a total of 580 high-potential, low-achieving students.

The high-potential students who were not low achievers were also grouped. Those whose grade point average ranged between 2.1 and 2.9 were designated Average Achievers. Those whose grade point average was 3.0 or higher were designated High Achievers.

The purpose of this grouping was solely for purposes of comparison on the questionnaire data. No experimental treatment was provided for these students as part of this research.

VIII. SELECTION OF TEACHERS

The teachers who participated in this study were the regular staff members in each building who happened to have one or more of the experimental students in an academic class. In that sense, the choice was random; no attempt was made to select certain teachers.

Since each academic teacher of an experimental student was automatically included in this study, a rather large number of teachers were involved. During the first semester, for example, 205 teachers in the four schools received student information.

During subsequent semesters, the numbers remained about the same. However, in many cases, the same teachers were involved more than one semester.

TABLE 8

NUMBER OF TEACHERS RECEIVING STUDENT INFORMATION FIRST SEMESTER

School	No. of Teachers
A	69
B	33
C	59
D	44
Total	205

The number of high-potential, low-achieving students about whom a teacher received information depended solely on how many happened to be in his classes.

TABLE 9

NUMBER OF EXPERIMENTAL STUDENTS ABOUT WHOM EACH TEACHER RECEIVED INFORMATION

School		No. Experimental Students Per Teacher									
		1	2	3	4	5	6	7	8	9	+
A	No. Teachers	24	20	7	7	7	2	1	0	0	1
B	No. Teachers	7	9	6	5	2	2	1	1	0	0
C	No. Teachers	8	15	8	9	5	5	5	0	0	4
D	No. Teachers	3	12	10	5	6	4	1	2	1	0
Total		42	56	31	26	20	13	8	3	1	5

It may be seen in Table 9, that 42 teachers had only one experimental student in a class, 56 had two, etc. As it worked out, three-quarters of the teachers received information about one to four students.

IX. DISTRIBUTION OF STUDENT INFORMATION

The student information which was distributed to teachers was obtained primarily from the questionnaire. The student's responses were condensed onto a one-page Student Information Form. To this was added the student's scholastic aptitude category, his 10B grade point average, and an occasional comment by the writer on some phase of the information.

If a teacher had one or more members of the experimental group in any of his classes, he received a copy of the Student Information Form for each student. The Forms were bound in a theme folder, together with a letter to the teacher which described the purpose of this project. The letter explained how the students were chosen and why the information was being supplied to teachers. It suggested that the teacher use the information to learn more about the student and to discover clues for means of helping him to improve.

The students did not know that the information was being given to the teachers. The letter encouraged the teacher to use the information as he saw fit, but it warned against imprudent disclosure of personal material.

In three of the four schools, the folders were simply distributed to the teachers, together with a brief note from the principal. In School A, the principal called a teachers' meeting so that the project could be explained. It was felt that the administrators in each of the schools supported and encouraged this research.

Thus, teachers received information about each of the high-potential, low-achieving students who constituted the experimental group. The number of teachers who had material about a particular student ranged from one to five, depending on the number of academic subjects in the student's schedule.

Students such as these usually take three or four academic subjects each semester.

Teachers were encouraged to add their own comments about the students. These comments then became part of the data on the student that was distributed the following semester.

X. CONSULTATION WITH TEACHERS

In two of the schools, B and D, the writer attempted to act as a counselor consultant to the teachers who were involved in this project. The primary purpose of this consultation was to discuss the behavior of particular students and to suggest ways of helping them. The visit also helped to clear up teacher questions about the project and to get their reaction to it. The consultation was provided in only two of the schools to assess the effect of this contact.

Since the counselor did not actually work in the school, the contact was more in the nature of a visit than a close, working relationship. Notice was sent to the teachers that the writer would be in their building and that they were invited to meet with him during a free period. During these conferences, the counselor would usually go over the data with the teacher and suggest possible approaches.

The counselor tried to encourage the teachers to take special steps to change the underachieving student. The contact was infrequent, usually only once a semester.

XI. SUMMARY OF PROCEDURES

After a review of research, it was decided that for this project, high-potential, low-achieving students would be defined as those who scored above the 75th percentile on the 10B SCAT and who attained a 10B grade point average of 2.0 or lower. The student records in several Detroit high schools were surveyed, and four of these were chosen as an adequate and representative sample.

The names of students who had scored in the top quartile were obtained from the test lists of the Department of Instructional Research. Then, in each school, the 10B grades were copied and a grade point average was computed.

Those designated as high-potential low-achievers were randomly assigned to three groups for differential treatment. Teachers were given personal information about members of the Experimental Group. They were given only the names of members of the Quasi-Control Group. The True Control Group was not identified to the teachers.

In the four schools, all those who had scored above percentile 75 on SCAT were asked to complete the educational questionnaire designed for this research. Notice was sent to each student, inviting him to appear at a designated place before or after his program or during a free period. It was explained that the Department of Guidance was conducting a research on high ability students and that they had been selected on the strength of the SCAT scores. They were asked to answer the questions as completely and frankly as possible so that the information would be useful and would show ways of helping students to do better in school.

The information that was gathered from the questionnaire provided data to give to the teachers of the experimentals, and it provided material for comparisons between high and low achievers.

Personal information about experimentals was condensed onto a Student Information Form and distributed to all teachers who had a member of the experimental group in an academic class. With this information went a letter which explained how the students were chosen and the research hypothesis that this data would enable them to be more effective in working with these particular students. Names of teachers were obtained from the student record cards in the counselors' offices.

At the end of the semester, the booklets of information were collected from the teachers, and the students' marks were obtained. As soon as the student schedule for the new semester was available, the information was sent to the new teachers. To this was added whatever teacher comments had been written and the grade point average for the previous semester. Each semester, the writer had some contact with the teachers in two of the schools.

This treatment began in the 10A semester and continued for five semesters, until the time of graduation if progress was regular. A certain number of the original group was lost during the course of the study due to transfers and dropouts.

The effects of this experiment were measured by grade point average; by the STEP series, an achievement battery given in the 10B and the 12B; and by the Bills IAV, a self concept index. It was hypothesized that the experimental group would exceed the controls on all these measures.

Additional data became available on the teacher reactions to the project and on the background and attitudes of high- and low-achieving students.

CHAPTER IV

ANALYSIS OF THE DATA

This report had access to five principal sources of data: (1) Personal data, obtained from the questionnaire responses; (2) Self Concept data, obtained from the Bills IAV; (3) Achievement data, obtained from the STEP-SCAT test results; (4) Grade Point Average data, obtained from student marks; and (5) Teacher Reaction data, obtained from a teacher questionnaire. Each of these will be analyzed separately.

I. ANALYSIS OF QUESTIONNAIRE DATA

The questionnaire used in this research was designed primarily to procure information about high-potential, low-achieving students. However, since the questionnaire had been administered to all 1,519 high-potential students, it was possible to compare the responses of low achievers to those whose achievement is closer to expectation. By this means, information was obtained about the distinctive characteristics of the underachiever.

The questionnaire items were grouped into the following categories: (1) sex, age, place of birth, (2) home and family, (3) interests and activities, (4) school, (5) future plans, (6) health, and (7) self attitudes and concerns. These responses were coded and entered onto punched cards for automatic data processing. Frequency distributions were run by the IBM 1401 Computer of the Detroit Board of Education.

The responses of Low Achievers (GPA = 2.0 or lower) were compared to those of the Average Achievers (GPA = 2.1 - 2.9) and the High Achievers

(GPA = 3.0 or higher). Chi square was selected as the appropriate statistical technique for comparison of the distributions. The purpose was to test the null hypothesis: There will be no statistically significant differences between the questionnaire responses of high-potential, low-achieving students and those of high-potential, achieving students. The .05 level of significance was chosen.

At the same time, the responses were run against one another. That is, the answer to a particular question was compared to the answers to other, related questions. These response patterns provide a more comprehensive picture of the background and attitudes of the low-achieving student.

QUESTIONS 1 - 8: Name, Sex, Age, Place of Birth

The first few items provide basic data relative to the groups of low-, average-, and high-achieving students. The chi square comparison of these groups by sex is given in Table 10:

TABLE 10

ANALYSIS OF QUESTIONNAIRE DATA: SEX

Comparison	Low Achievers	Average Achievers	High Achievers	X^2	p
Male	337	240	224		
Female	211	230	277	30.3	.001

It may be seen that there are significant differences in the make-up of the groups: there are more male low achievers and more female high achievers.

The mean age of the groups was compared by separating the students into two categories according to birth date: older (born before April, 1946), and younger (born after March 31, 1946). The results indicate that low-achieving males tend to be older than high-achieving males. This is not true of females (see Table 11).

TABLE 11

ANALYSIS OF QUESTIONNAIRE DATA:
DATE OF BIRTH

Sex	Comparison	Low Achievers	Average Achievers	High Achievers	X^2	p
Male	Older Younger	41 264	17 190	6 171	13.9	.001
Female	Older Younger	61 139	61 153	76 191	.38	N.S.

Since most of the students were born locally, only two categories were possible: those born in Detroit, and those born elsewhere. This analysis appears in Table 12:

TABLE 12

ANALYSIS OF QUESTIONNAIRE DATA:
PLACE OF BIRTH

Sex	Comparison	Low Achievers	Average Achievers	High Achievers	X^2	p
Male	Detroit Other	248 89	194 46	188 36	9.4	.01
Female	Detroit Other	168 43	192 38	223 54	1.1	N.S.

A significantly larger proportion of male low achievers were born outside Detroit.

QUESTION #9. Father's Place of Birth

The father's place of birth was analyzed for possible relationship to the achievement pattern of the child. The results indicate that this element has little bearing on the child's achievement. The only significance appears among male low achievers whose fathers were born in the Southeast section of the United States, and this affects only a small portion of the students (see Table 13).

TABLE 13

ANALYSIS OF QUESTIONNAIRE DATA: FATHER'S PLACE OF BIRTH

Sex	Comparison	Low Achievers	Average Achievers	High Achievers	χ^2	p
Male	Detroit	94	70	78		
	Other	243	170	146	3.27	N.S.
Female	Detroit	65	76	78		
	Other	146	154	199	1.45	N.S.
Male	Detroit & Mich.	127	92	96		
	Other	210	148	128	1.65	N.S.
Female	Detroit & Mich.	81	93	105		
	Other	130	137	172	.35	N.S.
Male	Northeast U.S.	41	31	28		
	Other	296	209	196	.08	N.S.
Female	Northeast U.S.	22	36	43		
	Other	189	194	234	3.32	N.S.
Male	North Central U.S.	34	31	26		
	Other	303	209	195	1.15	N.S.
Female	North Central U.S.	18	14	27		
	Other	193	216	250	2.29	N.S.
Male	Southeast U.S.	36	12	8		
	Other	301	228	216	12.5	.01
Female	Southeast U.S.	16	18	27		
	Other	195	212	250	.92	N.S.
Male	Foreign	59	58	50		
	Other	278	182	174	4.1	N.S.
Female	Foreign	47	42	56		
	Other	164	188	221	1.10	N.S.

This item, father's place of birth, was the first one for which responses were compared to other, related questions. The responses to this item were grouped into three categories: "Detroit," "Other than Detroit," and "Foreign."

For those whose fathers were born in Detroit, the following related items were significant:

Response to #9: Detroit

Sex	Significant Cross-Items		.05	.01
Male (N=242)	#19	Is less interested in scholarly pursuits		x
	#20	Has less talent for scholarly pursuits		x
	#23	Expects to own a car soon	x	
	#29	Spends less time in daily study		x
	#30	Spends less time in weekend study		x
	#33	Finds it hard to concentrate		x
	#35	Reports lack of study and lack of interest in school		x
	#36	Gets along less well with teachers		x
	#39	Feels lack of interest handicaps school work	x	
	#43	Is less likely to be planning on college		x
	#46	Plans to go further in school than father	x	
	#47	Is less likely to aim at professional work		x
	#48	Is less likely to see profession as eventual job	x	
	#49	Is not confident of reaching occupational goal		x
	#50	Feels occupational goal may be blocked		x
	#51	Has not discussed future plans with parents	x	
	#61	Has been concerned about making friends	x	
	#64	Has more health problems	x	
	#69	Considers school his chief problem		x
Female (N=219)	#26	Prefers English and Social Studies	x	
	#33	Finds it hard to concentrate		x
	#36	Gets along less well with teachers		x
	#50	Feels occupational goal may be blocked	x	
	#54	Feels parents are more strict		x
	#58	Makes friends better than others	x	
	#66	Is more likely to smoke		x
	#69	Considers school her chief problem		x

For those born Other than Detroit, the following related items were found to be significant:

Response to #9: Other than Detroit

Sex	Significant Cross-Items	.05	.01
Male (N=559)	#19 Is less interested in scholarly pursuits		x
	#20 Has less talent for scholarly pursuits	x	
	#23 Expects to own a car soon	x	
	#24 Participates less in school activities		x
	#26 Prefers English and social studies	x	
	#27 Dislikes math and science		x
	#29 Spends less time in daily study		x
	#30 Spends less time in weekend study		x
	#32 Has no definite plan for studying	x	
	#33 Finds it hard to concentrate		x
	#36 Gets along less well with teachers		x
	#37 Reports less help from teachers	x	
	#40 Has been in trouble in school		x
	#43 Is less likely to be planning on college		x
	#47 Is less likely to aim at professional work	x	
	#49 Is not confident of reaching occupational goal		x
	#59 Goes out more evenings		x
	#61 Has been concerned about making friends		x
	#66 Is more likely to smoke		x
	#69 Considers school his chief problem		x
Female (N=499)	#21 Is less likely to take music lessons	x	
	#23 Expects to own a car soon		x
	#24 Participates less in school activities		x
	#26 Prefers English and social studies	x	
	#29 Spends less time in daily study		x
	#30 Spends less time in weekend study		x
	#33 Finds it hard to concentrate		x
	#36 Gets along less well with teachers	x	
	#40 Has been in trouble in school		x
	#43 Is less likely to be planning on college	x	
	#62 Dates less	x	
	#66 Is more likely to smoke		x
	#68 Is less satisfied with physical self	x	
	#69 Considers school her chief problem	x	
	#70 Discusses problems less	x	
	#71 Discusses severe problems less	x	

For those who report the father's place of birth to be a foreign country, the following items were significant:

Response to #9: Foreign

Sex	Significant Cross-Items	.05	.01
Male (N=167)	#19 Is less interested in scholarly pursuits		x
	#24 Participates less in school activities		x
	#30 Spends less time in weekend study		x
	#33 Finds it hard to concentrate		x
	#36 Gets along less well with teachers		x
	#46 Plans to go further in school than father	x	
	#50 Feels occupational goal may be blocked	x	
	#61 Has been concerned about making friends		x
	#66 Is more likely to smoke		x
Female (N=145)	#26 Prefers English and social studies		x
	#29 Spends less time in daily study	x	
	#33 Finds it hard to concentrate		x
	#66 Is more likely to smoke		x
	#68 Is less satisfied with physical self		x
	#70 Discusses problems less	x	
	#71 Discusses severe problems less	x	

QUESTION #10. I live with: (1) Mother and Father (2) Mother and Stepfather (3) Father and Stepmother (4) Mother Only (5) Father Only (6) Relatives (7) Guardian (8) Other (Specify)

Response to this question discloses that the preponderence of these students live with parents. The so-called broken home is not an important element in the scholastic achievement of this population (see Table 14).

TABLE 14

ANALYSIS OF QUESTIONNAIRE DATA: WITH WHOM LIVING

Sex	Comparison	Low Achievers	Average Achievers	High Achievers	X^2	p
Male	Mother & Father	289	219	196		
	Other	48	21	28	4.0	N.S.
Female	Mother & Father	179	200	239		
	Other	32	30	38	.3	N.S.

For those who report that they live with Mother and Father, the following related items were significant:

Response to #10: Mother and Father

Sex	Significant Cross-Items	.05	.01
Male (N=704)	#21 Is less likely to take music lessons	x	
	#23 Expects to own car soon		x
	#24 Participates less in scholastic activities		x
	#29 Spends less time in daily study		x
	#30 Spends less time in weekend study		x
	#32 Has no definite plan for study	x	
	#33 Finds it hard to concentrate		x
	#35 Is troubled by lack of study and interest		x
	#36 Gets along less well with teachers		x
	#39 Feels lack of interest handicaps school work	x	
	#40 Has been in trouble in school		x
	#43 Is less likely to plan on college		x
	#46 Plans on more education than father		x
	#47 Is less likely to aim for professional work		x
	#48 Is less likely to see profession as eventual job	x	
	#49 Is not confident of occupational goal		x
	#50 Feels occupational goal may be blocked		x
	#51 Does not discuss future plans with parents	x	
	#55 Has more arguments with parents	x	
	#56 Says parents encourage and help him	x	
	#59 Goes out more evenings		x
	#61 Has less trouble making friends		x
	#65 Has more health problems	x	
	#66 Is more likely to smoke		x
	#69 Considers school his chief problem		x
Female (N=618)	#21 Is less likely to take music lessons	x	
	#23 Expects to own car soon	x	
	#24 Participates less in school activities		x
	#29 Spends less time in daily study	x	
	#30 Spends less time in weekend study	x	
	#33 Finds it hard to concentrate		x
	#36 Gets along less well with teachers		x
	#50 Feels occupational goal may be blocked	x	
	#54 Feels parents are more strict		x
	#63 Reports more trouble with siblings	x	
	#66 Is more likely to smoke		x
	#68 Is less satisfied with physical self	x	
	#69 Feels school is her chief problem		x
	#70 Discusses problems less	x	

For those who live with Other than Mother and Father, the following were significant:

Response to #10: Other than Mother and Father

Sex	Significant Cross-Items	.05	.01
Male (N=96)	#30 Spends less time in weekend study	x	
	#31 Has no regular time for study	x	
	#36 Gets along less well with teachers		x
	#41 Likes present school less	x	
	#51 Does not discuss future plans with parents	x	
	#69 Considers school chief problem		x
Female (N=100)	#23 Expects to own car soon	x	
	#24 Participates less in school activities	x	
	#29 Spends less time in daily study		x
	#30 Spends less time in weekend study	x	
	#40 Has been in trouble in school	x	
	#41 Likes present school less	x	
	#66 Is more likely to smoke		x

QUESTION #11. Father's Occupation

These responses were grouped into the following categories:

Professional

Managerial

Professional, Semi-professional, and Managerial combined

Skilled Trades

Manual Work

The relation of the father's occupational level and the child's scholastic achievement level is contained in Table 15.

TABLE 15

ANALYSIS OF QUESTIONNAIRE DATA: FATHER'S OCCUPATION

Sex	Comparison	Low Achievers	Average Achievers	High Achievers	χ^2	p
Male	Professional Other	49 288	53 187	54 170	9.3	.01
Female	Professional Other	28 183	50 180	61 216	7.0	.05
Male	Managerial Other	57 280	57 183	57 167	7.0	.05
Female	Managerial Other	59 152	49 181	55 222	4.8	N.S.
Male	Prof., Semi, Manage. Other	120 217	119 121	116 108	18.1	.001
Female	Prof., Semi, Manage. Other	93 118	111 119	135 142	1.1	N.S.
Male	Skilled Trades Other	47 290	35 205	29 195	.2	N.S.
Female	Skilled Trades Other	30 181	26 204	39 238	.9	N.S.
Male	Manual Work Other	57 280	29 214	15 209	13.6	.01
Female	Manual Work Other	26 185	29 201	38 239	.2	N.S.

Both male and female high achievers have significantly more fathers who are engaged in professional work. Male high achievers also have more semi-professional or managerial fathers. Skilled occupations do not appear with greater frequency in any group. Male low achievers have a higher proportion of fathers who are manual workers.

It appears that the father of the high achiever tends to rank higher on the occupational scale than does the father of the low achiever. Further, the occupation of the father is more relevant to the scholastic achievement of the son than it is to the daughter.

For those who report their father engaged in professional work, the following items were significant:

Response to #11: Professional

Sex	Significant Cross-Items	.05	.01
Male (N=156)	#23 Expects to own car soon	x	
	#33 Finds it hard to concentrate		x
	#36 Gets along less well with teachers	x	
	#49 Is less confident of occupational goal	x	
	#50 Feels occupational goal may be blocked		x
	#59 Goes out more evenings	x	
	#62 Dates more	x	
	#65 Has more health complaints	x	
	#66 Is more likely to smoke	x	
	#69 Considers school chief problem		x
Female (N=139)	#24 Participates less in school activities	x	
	#64 Has more health problems	x	

For those who report their father engaged in managerial work, the following items were significant:

Response to #11: Managerial

Sex	Significant Cross-Items	.05	.01
Male (N=171)	#30 Spends less time in weekend study		x
	#33 Finds it hard to concentrate		x
	#36 Gets along less well with teachers		x
	#46 Wants more education than father had		x
	#49 Is less confident of occupational goal	x	
	#50 Feels occupational goal may be blocked	x	
	#56 Says parents encourage and help		x
	#59 Goes out more evenings		x
	#61 Has less trouble making friends	x	
	#64 Has more health problems	x	
	#69 Considers school chief problem	x	

Response to #11: Managerial (Continued)

Sex	Significant Cross-Items	.05	.01
Female (N=163)	#24 Participates less in school activities	x	
	#30 Spends less time in weekend study	x	
	#33 Finds it hard to concentrate	x	
	#69 Considers school chief problem	x	

For those who report their father engaged as a skilled worker, the following items were significant:

Response to #11: Skilled Worker

Sex	Significant Cross-Items	.05	.01
Male (N=111)	#33 Finds it hard to concentrate	x	
	#36 Gets along less well with teachers	x	
	#54 Considers parents more strict		x
	#59 Goes out more evenings	x	
	#63 Has fewer problems with siblings	x	
	#68 Is less satisfied with physical self	x	
Female (N=95)	#21 Is less likely to take music lessons	x	
	#33 Finds it hard to concentrate		x
	#50 Feels occupational goal may be blocked	x	
	#64 Reports fewer health problems		x
	#66 Is more likely to smoke	x	
	#69 Considers school chief problem	x	

For those who report their father engaged in manual work, the following items were significant:

Response to #11: Manual Worker

Sex	Significant Cross-Items	.05	.01
Male (N=98)	#30 Spends less time in weekend study	x	
	#33 Finds it hard to concentrate	x	
	#59 Goes out more evenings	x	
	#69 Considers school chief problem		x
Female (N=93)	#66 Is more likely to smoke	x	
	#68 Is less satisfied with physical self	x	

QUESTION #12. Is He Working At Present? (1) Yes (2) No (3) Sometimes

The great majority of fathers of this student population were employed at the time of the study. Unemployment was not a significant factor (see Table 16).

TABLE 16

ANALYSIS OF QUESTIONNAIRE DATA:
IS FATHER PRESENTLY EMPLOYED?

Sex	Comparison	Low Achievers	Average Achievers	High Achievers	X^2	p
Male	Employed Not Employed	301 36	218 22	199 25	.4	N.S.
Female	Employed Not Employed	185 26	197 33	243 34	.4	N.S.

QUESTION #13. Is your mother employed? (1) Yes (2) No

QUESTION #14. If so, what kind of job does she have?

Neither the fact of employment nor the type of work performed was found to differ significantly in any of the groups (see Table 17).

TABLE 17

ANALYSIS OF QUESTIONNAIRE DATA: MOTHER'S EMPLOYMENT

Sex	Comparison	Low Achievers	Average Achievers	High Achievers	χ^2	p
Male	Employed	121	82	79		
	Not Employed	216	158	145	.1	N.S.
Female	Employed	78	76	113		
	Not Employed	133	154	165	1.7	N.S.
Male	Professional	26	19	20		
	Other	95	63	59	.3	N.S.
Female	Professional	13	20	34		
	Other	65	56	79	4.4	N.S.
Male	Clerical	35	30	29		
	Other	86	52	50	1.7	N.S.
Female	Clerical	32	25	39		
	Other	46	51	74	1.2	N.S.

For those students who report that the mother is employed, the following related items were found to be significant:

Response to #13: Yes

Sex	Significant Cross-Items	.05	.01
Male (N=282)	#21 Is less likely to take music lessons	x	
	#29 Spends less time in daily study		x
	#30 Spends less time in weekend study		x
	#33 Finds it hard to concentrate		x
	#35 Is troubled by lack of study and interest	x	
	#36 Gets along less well with teachers		x
	#47 Is less likely to aim at professions		x
	#48 Is less likely to see profession as eventual job	x	
	#56 Says parents encourage and help	x	
	#69 Considers school chief problem		x

Response to #13: Yes (Continued)

Sex	Significant Cross-Items	.05	.01
Female (N=267)	#16 Has someone besides parents in home		x
	#21 Is more likely to take music lessons		x
	#24 Participates less in school activities	x	
	#29 Spends less time in daily study		x
	#30 Spends less time in weekend study	x	
	#33 Finds it hard to concentrate	x	
	#40 Has been in trouble in school	x	
	#48 Is less likely to see profession as eventual job	x	

For those students who report the mother is not employed, the following related items were significant:

Response to #13: No

Sex	Significant Cross-Items	.05	.01
Male (N=509)	#24 Participates less in school activities		x
	#29 Spends less time in daily study		x
	#30 Spends less time in weekend study		x
	#33 Finds it hard to concentrate		x
	#35 Is troubled by lack of study and interest	x	
	#36 Gets along less well with teachers		x
	#43 Is less likely to be planning on college		x
	#46 Plans to go further in school than father	x	
	#47 Is less likely to aim at professions	x	
	#48 Is less likely to see profession as eventual job	x	
	#51 Has not discussed future plans with parents		x
	#55 Has more arguments with parents		x
	#59 Goes out more evenings		x
	#61 Has fewer problems making friends		x
	#69 Considers school chief problem		x
Female (N=443)	#24 Participates less in school activities		x
	#25 Participates less in out-of-school activities	x	
	#29 Spends less time in daily study	x	
	#30 Spends less time in weekend study	x	
	#33 Finds it hard to concentrate		x
	#36 Gets along less well with teachers		x
	#54 Considers her parents more strict	x	
	#69 Considers school chief problem		x

QUESTION #15. Write the first name and the age of each of your brothers and sisters, starting with the oldest. Underline those not living in your home.

An analysis of the number of siblings in the various achievement groups is contained in Table 18.

TABLE 18

ANALYSIS OF QUESTIONNAIRE DATA:
NUMBER OF SIBLINGS

Sex	Comparison	Low Achievers	Average Achievers	High Achievers	χ^2	p
Male	None	43	17	16	7.2	.05
	Other	294	223	208		
Female	None	25	17	41	6.6	.05
	Other	186	213	236		
Male	One	116	82	94	4.0	N.S.
	Other	221	158	130		
Female	One	71	93	110	2.6	N.S.
	Other	140	137	167		
Male	One or two	211	165	172	12.5	.01
	Other	126	75	52		
Female	One or two	127	156	175	2.7	N.S.
	Other	84	74	102		
Male	Two	95	83	78	3.7	N.S.
	Other	242	157	146		
Female	Two	56	63	65	1.8	N.S.
	Other	155	167	212		
Male	More than two	83	58	36	6.5	.05
	Other	254	182	188		
Female	More than two	59	57	61	2.2	N.S.
	Other	152	173	216		

An interesting pattern emerges: the male low achiever more frequently is an only child or else comes from a larger family of more than three children. More male high achievers have one or two siblings. Female high achievers, on the other hand, are more likely to be only children.

For those who report that they are only children or have only one sibling, the following items were significant:

Response to #15: One Sibling or None

Sex	Significant Cross-Items	.05	.01
Male (N=368)	#21 Is less likely to take music lessons		x
	#24 Participates less in school activities		x
	#29 Spends less time in daily study	x	
	#30 Spends less time in weekend study		x
	#33 Finds it hard to concentrate		x
	#36 Gets along less well with teachers		x
	#43 Is less likely to be planning on college	x	
	#54 Considers parents more strict	x	
	#55 Has more arguments with parents	x	
	#61 Has fewer problems making friends		x
	#62 Dates more	x	
Female (N=357)	#23 Expects to own car soon	x	
	#24 Participates less in school activities		x
	#29 Spends less time in daily study		x
	#30 Spends less time in weekend study	x	
	#33 Finds it hard to concentrate		x
	#36 Gets along less well with teachers	x	
	#54 Considers parents more strict		x
	#55 Has more arguments with parents		x
	#61 Has fewer problems making friends	x	
	#62 Dates more		x

For those who report that they have two or more siblings, the following items were significant:

Response to #15: Two or More Siblings

Sex	Significant Cross-Items	.05	.01
Male (N=433)	#23 Expects to own car soon		x
	#24 Participates less in school activities	x	
	#29 Spends less time in daily study		x
	#30 Spends less time in weekend study		x
	#31 Has no regular time for study		x
	#33 Finds it hard to concentrate		x
	#35 Troubled by lack of study and interest		x
	#36 Gets along less well with teachers		x
	#43 Is less likely to be planning on college		x
	#47 Is less likely to aim at professions	x	
	#49 Is not confident of occupational goal		x
	#55 Has more arguments with parents		x
	#61 Has fewer problems making friends	x	
	#62 Dates more	x	
Female (N=361)	#29 Spends less time in daily study	x	
	#30 Spends less time in weekend study	x	
	#33 Finds it hard to concentrate		x
	#36 Gets along less well with teachers	x	
	#62 Dates more		x
	#68 Is less satisfied with physical self	x	

QUESTION #16. Who else lives in your home?

The presence in the home of some person other than the members of the immediate family was not found to be a significant factor (see Table 19).

TABLE 19

ANALYSIS OF QUESTIONNAIRE DATA: OTHER PERSONS IN THE HOME

Sex	Comparison	Low Achievers	Average Achievers	High Achievers	χ^2	p
Male	Someone	44	27	31		
	No one	293	213	193	.6	N.S.
Female	Someone	35	25	42		
	No one	176	205	235	3.2	N.S.

For those who reported that no one beyond the family lived in the home, the following items were significant:

Response to #16: No One

Sex	Significant Cross-Items	.05	.01
Male (N=699)	#24 Participates less in school activities		x
	#29 Spends less time in daily study		x
	#30 Spends less time in weekend study		x
	#33 Finds it hard to concentrate		x
	#36 Gets along less well with teachers		x
	#40 Has been in trouble in school	x	
	#54 Considers parents more strict	x	
	#59 Gets out more evenings		x
Female (N=616)	#25 Participates less in out-of-school activities		x
	#29 Spends less time in daily study		x
	#30 Spends less time in weekend study		x
	#33 Finds it hard to concentrate		x
	#36 Gets along less well with teachers		x
	#40 Has been in trouble in school	x	

For those who reported that someone beyond the family lived in the home, the following items were significant:

Response to #16: Someone

Sex	Significant Cross-Items	.05	.01
Male (N=102)	#29 Spends less time in daily study		x
	#30 Spends less time in weekend study	x	
	#40 Has been in trouble in school	x	
	#59 Goes out more evenings		x
Female (N=102)	#24 Participates less in school activities	x	
	#33 Finds it hard to concentrate		x
	#54 Considers parents more strict	x	
	#59 Goes out more evenings		x

QUESTION #17. How many hours a week are you employed? (1) None (2) Less than 5 (3) 5-10 (4) 10-20 (5) More than 20 hours

The importance of student employment was explored in Question 17. The results, as shown in Table 20, indicate that employment is not a significant variable.

TABLE 20

ANALYSIS OF QUESTIONNAIRE DATA:
STUDENT EMPLOYMENT

Sex	Comparison	Low Achievers	Average Achievers	High Achievers	X^2	p
Male	Employed Not Employed	102 235	89 151	76 148	2.9	N.S.
Female	Employed Not Employed	29 182	26 204	26 251	2.1	N.S.

For those students who report that they are employed, the following related items were found to be significant:

Response to #17: Employed

Sex	Significant Cross-Items	.05	.01
Male (N=267)	#21 Is less likely to take music lessons	x	
	#24 Participates less in school activities		x
	#29 Spends less time in daily study		x
	#30 Spends less time in weekend study	x	
	#33 Finds it hard to concentrate		x
	#36 Gets along less well with teachers		x
	#43 Is less likely planning on college	x	
	#47 Is less likely planning on a profession	x	
	#66 Is more likely to smoke		x
Female (N=81)	#24 Participates less in school activities		x
	#27 Tends to dislike math and science	x	
	#61 Has less trouble making friends		x

For those students who report that they are not employed, the following related items were found to be significant:

Response to #17: Not Employed

Sex	Significant Cross-Items	.05	.01
Male (N=534)	#21 Is less likely to take music lessons	x	
	#23 Expects to own a car soon		x
	#26 Is less likely to prefer math and science		x
	#29 Spends less time in daily study		x
	#30 Spends less time in weekend study		x
	#33 Finds it hard to concentrate		x
	#35 Is troubled by lack of study and interest		x
	#36 Gets along less well with teachers		x
	#39 Feels lack of interest handicaps school work	x	
	#40 Has been in trouble in school	x	
	#43 Is less likely planning on college		x
	#47 Is less likely planning on a profession	x	
	#48 Is unsure of profession as eventual job	x	
	#49 Is not confident of occupational goal		x
	#59 Goes out more evenings		x
	#61 Has less trouble making friends		x
	#66 Is more likely to smoke		x
Female (N=637)	#23 Expects to own car soon		x
	#24 Participates less in school activities	x	
	#29 Spends less time in daily study		x
	#30 Spends less time in weekend study		x
	#33 Finds it hard to concentrate		x
	#36 Gets along less well with teachers		x
	#40 Has been in trouble in school		x
	#43 Is less likely planning on college		x
	#66 Is more likely to smoke		x

QUESTION #18. What sort of things do you spend your time doing?

QUESTION #19. What things interest you a great deal?

These two questions brought similar answers. The responses were grouped into the following categories:

Scholarly Pursuits: school work, reading, current events, discussion, *etc*.

Sports: games and activities, exercise, hunting and fishing, out-of-door activities, *etc*.

Skills and Hobbies: collecting, models, cooking and sewing, repairing, building, *etc*.

Social Activities: going out with friends, dating, dancing, clubs, youth groups, *etc*.

Creative Arts: painting, singing, playing an instrument, dramatics, writing, *etc*.

Idleness: loafing, listening to radio or records, watching TV, doing nothing, *etc*.

These responses are broken down in Table 21.

Both male and female high achievers report significantly more time and interest devoted to scholarship-related activities. Male low achievers, on the other hand, are more interested in skills and hobbies. As far as sports, creative arts, social activities, and idleness, no differences appeared.

QUESTION #20. What is your special talent; the thing you can do best?

Responses to this general question were also grouped into categories: Scholarship, Sports and Games, Mechanical Work and Skills, Creative Arts, and None. The analysis appears in Table 22.

High achievers of both sexes are more likely to consider scholarship their special talent. Low-achieving boys are significantly more likely to see themselves as talented in mechanical work and skills; female low achievers see themselves more frequently as talented in creative arts.

TABLE 21

ANALYSIS OF QUESTIONNAIRE DATA: ACTIVITIES

Sex	Comparison	Low Achievers	Average Achievers	High Achievers	χ^2	p
Male	Scholarship	159	123	142		
	Others	178	117	82	20.2	.001
Female	Scholarship	127	149	160		
	Others	84	81	117	8.1	.02
Male	Sports	186	144	136		
	Others	151	96	88	2.1	N.S.
Female	Sports	45	59	78		
	Others	166	171	199	2.8	N.S.
Male	Skills and Hobbies	110	58	50		
	Others	227	182	174	8.8	.02
Female	Skills and Hobbies	32	55	52		
	Others	179	175	225	5.4	N.S.
Male	Creative Arts	35	22	30		
	Others	302	218	194	2.2	N.S.
Female	Creative Arts	42	49	57		
	Others	169	181	220	.0	N.S.
Male	Social Activities	76	54	45		
	Others	261	186	179	.5	N.S.
Female	Social Activities	76	62	77		
	Others	135	168	200	5.3	N.S.
Male	Idleness	47	40	34		
	Others	290	200	190	.7	N.S.
Female	Idleness	49	37	44		
	Others	162	193	233	2.4	N.S.

TABLE 22

ANALYSIS OF QUESTIONNAIRE DATA: TALENT

Sex	Comparison	Low Achievers	Average Achievers	High Achievers	X^2	p
Male	Scholarship Other	35 302	32 208	48 176	13.4	.01
Female	Scholarship Other	9 202	14 216	29 248	7.5	.05
Male	Sports and Games Other	101 236	68 172	50 174	4.0	N.S.
Female	Sports and Games Other	22 189	20 210	24 253	.4	N.S.
Male	Mech. Work & Skills Other	38 299	18 222	8 216	10.6	.01
Female	Mech. Work & Skills Other	13 198	21 209	27 250	1.8	N.S.
Male	Creative Arts Other	81 256	50 190	52 172	.7	N.S.
Female	Creative Arts Other	112 99	81 149	129 148	14.8	.001
Male	None Other	26 265	20 179	22 166	.8	N.S.
Female	None Other	16 165	18 170	25 211	.3	N.S.

QUESTION #21. Do you take lessons in any of these? (1) Music: Yes No; (2) Dancing: Yes No; (3) Art: Yes No

The pattern of private lessons in music, art, or dancing reveals differences in the groups (see Table 23).

TABLE 23

ANALYSIS OF QUESTIONNAIRE DATA:
LESSONS IN MUSIC, ART, DANCE

Sex	Comparison	Low Achievers	Average Achievers	High Achievers	χ^2	p
Male	Take Lessons	64	57	65		
	None	273	183	158	8.3	.02
Female	Take Lessons	77	112	116		
	None	134	118	161	6.7	.05

Low-achieving boys and girls are less likely to be taking private lessons.

For those students who report that they do not take lessons, the following related items were significant:

Response to #21: None

Sex	Significant Cross-Items	.05	.01
Male (N=614)	#24 Participates less in school activities	x	
	#26 Likes math and science less		x
	#29 Spends less time in daily study		x
	#30 Spends less time in weekend study		x
	#32 Has no definite plan for studying		x
	#33 Finds it hard to concentrate		x
	#35 Is troubled by lack of study and interest		x
	#36 Gets along less well with teachers		x
	#43 Is less likely planning on college		x
	#47 Is less likely planning on a profession		x
	#48 Is less sure of profession as eventual job		x
	#49 Is not confident of occupational goal		x
	#59 Goes out more evenings		x
	#61 Has fewer problems making friends	x	

Response to #21: None (Continued)

Sex	Significant Cross-Items	.05	.01
Female (N=413)	#29 Spends less time in daily study	x	
	#30 Spends less time in weekend study	x	
	#33 Finds it hard to concentrate		x
	#36 Gets along less well with teachers		x
	#58 Feels superior at making friends		x

For those students who report that they do take lessons, the following related items were significant:

Response to #21: Some Lessons

Sex	Significant Cross-Items	.05	.01
Male (N=187)	#24 Participates less in school activities	x	
	#27 Is more likely to dislike language		x
	#30 Spends less time in weekend study	x	
	#33 Finds it hard to concentrate		x
	#35 Is troubled by lack of study and interest	x	
	#43 Is less likely planning on college		x
	#47 Is less likely planning on a profession	x	
	#61 Has fewer problems making friends		x
Female (N=305)	#24 Participates less in school activities	x	
	#27 Is more likely to dislike math	x	
	#29 Spends less time in daily study		x
	#30 Spends less time in weekend study		x
	#33 Finds it hard to concentrate		x
	#36 Gets along less well with teachers	x	
	#39 Feels lack of interest and study a handicap		x

QUESTION #22. Do you own a car? (1) Yes (2) No

QUESTION #23. Do you expect to own a car before you graduate? (1) Yes (2) No

At the time the students completed this questionnaire, most of them were too young to actually own an automobile. However, the question as to whether they expected to own one before graduation pointed to significant differences. More male and female low achievers anticipate owning an automobile before they finish high school (see Table 24).

TABLE 24

ANALYSIS OF QUESTIONNAIRE DATA:
EXPECT TO OWN AUTOMOBILE

Sex	Comparison	Low Achievers	Average Achievers	High Achievers	χ^2	p
Male	Expect to Own	156	100	72		
	Do Not	181	140	152	11.0	.01
Female	Expect to Own	53	45	37		
	Do Not	158	185	240	10.8	.01

For those students who report that they do expect to own a car before graduation, the following related items were found to be significant:

Response to #23: Yes

Sex	Significant Cross-Items	.05	.01
Male (N=328)	#24 Participates less in school activities		x
	#29 Spends less time in daily study		x
	#30 Spends less time in weekend study		x
	#36 Gets along less well with teachers		x
	#43 Is less likely planning on college	x	
	#47 Is less likely planning on a profession	x	
	#59 Goes out more evenings	x	
	#61 Has fewer problems making friends		x
	#66 Is more likely to smoke		x
	#69 Considers school chief problem	x	
	#72 Is less satisfied with self	x	
Female (N=135)	#36 Gets along less well with teachers	x	
	#58 Feels superior at making friends	x	
	#66 Is more likely to smoke	x	

For those students who report they do not expect to own a car before graduation, the following related items were found to be significant:

Response to #23: No

Sex	Significant Cross-Items	.05	.01
Male (N=451)	#29 Spends less time in daily study		x
	#30 Spends less time in weekend study		x
	#35 Is troubled by lack of study and interest		x
	#36 Gets along less well with teachers		x
	#40 Has been in trouble in school		x
	#43 Is less likely planning on college		x
	#66 Is more likely to smoke		x
	#69 Considers school chief problem		x
Female (N=565)	#24 Participates less in school activities		x
	#29 Spends less time in daily study	x	
	#30 Spends less time in weekend study		x
	#36 Gets along less well with teachers	x	
	#39 Is handicapped by lack of interest	x	
	#54 Considers parents more strict	x	
	#66 Is more likely to smoke		x
	#69 Considers school chief problem		x

QUESTION #24. Do you participate in any school activities? If so, which ones? (Name Them) (1) Sports (2) Clubs (3) Clerical Aid (4) Music (5) Speech (6) Others

The responses to this question disclosed a distinct pattern of difference in the incidence of participation in school activities (see Table 25).

High-achieving students are much more likely to participate in school activities. There are differences also in the kinds of activities chosen. Participation in sports is about equal in the groups. High-achieving boys and girls are more often active in clubs. Average- and high-achieving boys participate more in music activities.

TABLE 25

ANALYSIS OF QUESTIONNAIRE DATA: PARTICIPATION IN SCHOOL ACTIVITIES

Sex	Comparison	Low Achievers	Average Achievers	High Achievers	X^2	p
Male	Participate Do Not	162 175	138 102	143 81	14.1	.001
Female	Participate Do Not	113 98	157 73	197 80	17.6	.001
Male	Sports Other	101 236	66 174	54 170	2.3	N.S.
Female	Sports Other	30 181	35 195	41 236	.0	N.S.
Male	Clubs Other	50 287	48 192	64 160	15.6	.001
Female	Clubs Other	57 154	82 148	114 163	10.4	.01
Male	Music Other	28 309	37 203	27 197	7.0	.05
Female	Music Other	36 175	54 176	56 221	2.8	N.S.

For those students who report that they do not participate in school activities, the following related items were found to be significant:

Response to #24: None

Sex	Significant Cross-Items	.05	.01
Male (N=357)	#26 Likes math and science less #29 Spends less time in daily study #30 Spends less time in weekend study #36 Gets along less well with teachers #43 Is less likely planning on college #66 Is more likely to smoke		x x x x x x

Response to #24: None (Continued)

Sex	Significant Cross-Items	.05	.01
Female (N=251)	#30 Spends less time in weekend study	x	
	#36 Gets along less well with teachers		x
	#58 Feels superior at making friends	x	
	#66 Is more likely to smoke		x

For those students who report that they do participate in school activities, the following related items were found to be significant:

Response to #24: Some Activities

Sex	Significant Cross-Items	.05	.01
Male (N=440)	#30 Spends less time in weekend study		x
	#36 Gets along less well with teachers		x
	#43 Is less likely planning on college	x	
	#48 Is less sure of profession as eventual job	x	
	#51 Discusses future plans with parents less	x	
	#66 Is more likely to smoke	x	
Female (N=467)	#29 Spends less time in daily study		x
	#30 Spends less time in weekend study		x
	#43 Is less likely planning on college	x	
	#66 Is more likely to smoke		x

QUESTION #25. Do you participate in any out-of-school activities? If so, name them: (1) Clubs (2) Church Groups (3) J.A. (4) Athletic Teams (5) Others

There were no statistically significant differences in the incidence of participation in organized out-of-school groups (see Table 26).

TABLE 26

ANALYSIS OF QUESTIONNAIRE DATA: PARTICIPATION IN OUT-OF-SCHOOL GROUPS

Sex	Comparison	Low Achievers	Average Achievers	High Achievers	X^2	p
Male	Participate Do Not	221 116	176 64	156 68	3.9	N.S.
Female	Participate Do Not	141 70	155 75	204 73	2.5	N.S.

For those students who report that they do not participate in out-of-school groups, the following related items were found to be significant:

Response to #25: None

Sex	Significant Cross-Items	.05	.01
Male (N=248)	#29 Spends less time in daily study		x
	#30 Spends less time in weekend study		x
	#33 Finds it hard to concentrate		x
	#36 Gets along less well with teachers		x
	#43 Is less likely planning on college		x
	#51 Discusses future plans with parents less		x
	#59 Goes out more evenings		x
	#66 Is more likely to smoke		x
Female (N=218)	#29 Spends less time in daily study		x
	#33 Finds it hard to concentrate	x	
	#36 Gets along less well with teachers	x	
	#58 Feels superior in making friends	x	
	#66 Is more likely to smoke	x	

For those students who report that they do participate in out-of-school groups, the following related items were found to be significant:

Response to #25: Some Activities

Sex	Significant Cross-Items	.05	.01
Male (N=553)	#29 Spends less time in daily study	x	
	#30 Spends less time in weekend study		x
	#33 Finds it hard to concentrate		x
	#36 Gets along less well with teachers		x
	#48 Is less sure of profession as eventual job		x
	#66 Is more likely to smoke		x
Female (N=500)	#29 Spends less time in daily study		x
	#30 Spends less time in weekend study		x
	#33 Finds it hard to concentrate		x
	#36 Gets along less well with teachers	x	
	#43 Is less likely planning on going to college		x
	#66 Is more likely to smoke		x

QUESTION #26. Subject I like best: (1) English (2) Social Studies
(3) Mathematics (4) Science (5) Language (6) Commercial
(7) Shop (8) Art or Music (9) Other (Specify)

The student's choice of favorite subject gives some insight into the kind of school work to which he responds. The choices are compared in Table 27.

It appears that a higher proportion of low achievers prefer English and social studies. High achievers, on the other hand, prefer math and science. In addition, more high-achieving females like foreign language, and more low-achieving males like shop.

(This question was not compared to other items.)

TABLE 27

ANALYSIS OF QUESTIONNAIRE DATA:
SUBJECT LIKED MOST

Sex	Comparison	Low Achievers	Average Achievers	High Achievers	X^2	p
Male	English, Social Studies Math, Science	67 118	37 101	25 112	12.7	.01
Female	English, Social Studies Math, Science	63 34	39 57	47 59	13.3	.01
Male	Foreign Language Other	9 328	6 234	11 213	3.8	N.S.
Female	Foreign Language Other	12 199	24 206	35 242	6.6	.05
Male	Shop Other	18 319	9 231	2 222	7.6	.05
Female	Art, Music Other	26 185	18 212	23 254	3.0	N.S.

QUESTION #27. Subject I like least: (1) English (2) Social Studies (3) Mathematics (4) Science (5) Language (6) Commercial (7) Shop (8) Art or Music (9) Other (Specify)

An analysis of subjects liked least is given in Table 28.

A number of trends are evident: Male high achievers dislike social studies, and male low achievers dislike math and language. Female low achievers dislike science. Generally, these last two questions point to a preference among the high achievers for the technical math and science work, and a preference among low achievers for the English and social studies.

(This question was not compared to related items.)

TABLE 28

ANALYSIS OF QUESTIONNAIRE DATA: SUBJECT LIKED LEAST

Sex	Comparison	Low Achievers	Average Achievers	High Achievers	X^2	p
Male	English Other	51 286	45 195	46 178	2.8	N.S.
Female	English Other	13 198	22 208	19 258	2.0	N.S.
Male	Social Studies Other	15 322	7 233	19 205	8.0	.02
Female	Social Studies Other	20 191	23 207	32 245	.5	N.S.
Male	Math Other	55 282	34 206	17 207	9.0	.02
Female	Math Other	78 133	69 161	76 201	5.2	N.S.
Male	Science Other	27 310	21 219	11 213	2.7	N.S.
Female	Science Other	16 195	33 197	47 230	9.4	.01
Male	Language Other	96 241	70 170	42 182	8.3	.02
Female	Language Other	21 190	33 197	29 248	2.5	N.S.
Male	English, Social Stds Math, Science	66 82	52 55	65 28	15.6	.001
Female	English, Social Stds Math, Science	33 94	45 102	51 123	.6	N.S.

QUESTION #28. I have attended (how many) different schools since the first grade.

The frequency of change of schools gives a measure of the mobility of the student's family. However, this item did not disclose significance for this population (see Table 29).

TABLE 29

ANALYSIS OF QUESTIONNAIRE DATA: NUMBER OF SCHOOLS ATTENDED

Sex	Comparison	Low Achievers	Average Achievers	High Achievers	X^2	p
Male	1-3 Schools	237	181	171		
	More Than 3	98	57	52	3.1	N.S.
Female	1-3 Schools	159	163	196		
	More Than 3	49	66	79	2.0	N.S.

For those students who report that they have attended from 1 to 3 schools, the following related items were found to be significant:

Response to #28: 1-3 Schools

Sex	Significant Cross-Items	.05	.01
Male (N=589)	#29 Spends less time in daily study		x
	#30 Spends less time in weekend study		x
	#33 Finds it hard to concentrate		x
	#35 Is troubled by lack of study and interest		x
	#36 Gets along less well with teachers		x
	#39 Is handicapped by lack of interest		x
	#43 Is less likely planning on college		x
	#47 Is less likely planning on a profession		x
	#48 Is less likely to see profession as eventual job		x
	#49 Lacks confidence in occupational goal		x
	#50 Feels goal may be blocked		x
	#61 Has fewer problems making friends		x

Response to #28: 1-3 Schools (Continued)

Sex	Significant Cross-Items	.05	.01
Female (N=518)	#29 Spends less time in daily study		x
	#30 Spends less time in weekend study		x
	#33 Finds it hard to concentrate		x
	#36 Gets along less well with teachers		x
	#40 Has been in trouble in school	x	
	#50 Feels goal may be blocked	x	
	#61 Has fewer problems making friends	x	

For those students who report that they have attended more than 3 schools, the following related items were found to be significant:

Response to #28: More than 3 Schools

Sex	Significant Cross-Items	.05	.01
Male (N=207)	#29 Spends less time in daily study		x
	#30 Spends less time in weekend study		x
	#36 Gets along less well with teachers		x
	#40 Has been in trouble in school		x
	#41 Like present school less	x	
Female (N=194)	#29 Spends less time in daily study		x
	#30 Spends less time in weekend study	x	
	#33 Finds it hard to concentrate		x

QUESTION #29. On the average, about how much time do you spend studying at home each school day? (1) Less than 1 hour (2) 1-2 hours (3) 2-3 hours (4) More than 3 hours

This question was a highly discriminating item disclosing important differences in the study habits of low, average, and high achievers (see Table 30).

TABLE 30

ANALYSIS OF QUESTIONNAIRE DATA:
TIME SPENT IN DAILY STUDY

Sex	Comparison	Low Achievers	Average Achievers	High Achievers	X^2	p
Male	Less Than 2 Hours More Than 2 Hours	246 90	145 91	118 102	23.2	.001
Female	Less Than 2 Hours More Than 2 Hours	125 86	118 109	111 162	17.0	.001

To a highly significant degree, male and female high achievers spend more time in daily study than do low achievers.

For those students who report that they spend less time in daily study (responses #1 or #2), the following related items were found to be significant:

Response to #29: #1 or #2

Sex	Significant Cross-Items	.05	.01
Male (N=509)	#30 Spends less time in weekend study		x
	#33 Finds it hard to concentrate		x
	#36 Gets along less well with teachers		x
	#39 Is handicapped by lack of interest		x
	#43 Is less likely planning on college		x
	#46 Wants more education than father	x	
	#48 Does not see profession as eventual job	x	
	#49 Is not confident of occupational goal		x
	#54 Feels parents are more strict	x	
	#59 Goes out more evenings	x	
	#61 Has fewer problems making friends		x
	#62 Dates more		x
	#66 Is more likely to smoke		x
	#69 Considers school chief problem	x	

Response to #29: #1 or #2 (Continued)

Sex	Significant Cross-Items	.05	.01
Female (N=354)	#30 Spends less time in weekend study		x
	#33 Finds it hard to concentrate		x
	#36 Gets along less well with teachers	x	
	#40 Has been in trouble in school		x
	#42 Feels teachers could be improved	x	
	#46 Wants more education than father	x	
	#50 Feels goal may be blocked		x
	#56 Says parents encourage and help	x	
	#62 Dates more		x
	#66 Is more likely to smoke		x
	#69 Considers school chief problem		x

For those students who report that they spend more time in daily study (responses #3 or #4), the following related items were found to be significant:

Response to #29: #3 or #4

Sex	Significant Cross-Items	.05	.01
Male (N=283)	#33 Finds it hard to concentrate		x
	#34 Feels reading is a problem	x	
	#36 Gets along less well with teachers		x
	#40 Has been in trouble in school	x	
	#44 Is urged to attend college by mother	x	
	#49 Is not confident of occupational goal	x	
	#50 Feels goal may be blocked	x	
	#59 Goes out more evenings	x	
	#61 Has fewer problems making friends	x	
	#62 Dates more	x	
	#66 Is more likely to smoke		x
	#69 Considers school chief problem		x
Female (N=357)	#32 Has definite plan for study	x	
	#49 Is not confident of occupational goal	x	
	#54 Feels parents are more strict	x	
	#66 Is more likely to smoke		x
	#69 Considers school chief problem		x

QUESTION #30. About how much time do you spend studying on Saturday and Sunday?
(1) Less than 1 hour (2) 1-2 hours (3) 2-3 hours (4) 3-4 hours
(5) 4-5 hours (6) 5-6 hours (7) 6-7 hours (8) 7-8 hours
(9) more than 8 hours

This question, related to weekend study, produced the same result: High achievers spend significantly more time in study (see Table 31).

TABLE 31

ANALYSIS OF QUESTIONNAIRE DATA:
TIME SPENT IN WEEKEND STUDY

Sex	Comparison	Low Achievers	Average Achievers	High Achievers	x^2	p
Male	Less Than 2 Hours	200	111	78		
	More Than 2 Hours	136	127	144	32.4	.001
Female	Less Than 2 Hours	103	76	92		
	More Than 2 Hours	107	152	184	15.4	.001

For those students who report that they spend less time in study (responses #1 or #2), the following related items were found to be significant:

Response to #30: #1 or #2

Sex	Significant Cross-Items	.05	.01
Male (N=389)	#33 Finds it hard to concentrate		x
	#36 Gets along less well with teachers		x
	#39 Is handicapped by lack of interest		x
	#43 Is less likely planning on college	x	
	#46 Wants more education than father		x
	#47 Is less likely planning on profession		x
	#48 Doesn't see profession as eventual job		x
	#49 Lacks confidence in occupational goal		x
	#59 Goes out more evenings		x
	#61 Has fewer problems making friends		x
	#66 Is more likely to smoke		x
	#69 Considers school chief problem	x	

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Response to #30: #1 or #2 (Continued)

Sex	Significant Cross-Items	.05	.01
Female (N=271)	#33 Finds it hard to concentrate		x
	#40 Has been in trouble in school		x
	#47 Is less likely planning on profession	x	
	#49 Lacks confidence in occupational goal		x
	#50 Feels goal may be blocked	x	
	#62 Dates more		x
	#66 Is more likely to smoke		x
	#69 Considers school chief problem	x	

For those students who report that they spend more time in study (responses #3 - #9), the following related items were found to be significant:

Response to #30: #3 - #9

Sex	Significant Cross-Items	.05	.01
Male (N=407)	#33 Finds it hard to concentrate		x
	#35 Troubled by lack of study and interest		x
	#36 Gets along less well with teachers		x
	#40 Has been in trouble in school	x	
	#43 Is less likely planning on college		x
	#45 Urged to attend college by father		x
	#47 Is less likely planning on profession		x
	#50 Feels goal may be blocked		x
	#61 Has fewer problems making friends		x
	#62 Dates more		x
	#66 Is more likely to smoke		x
	#69 Considers school chief problem		x
Female (N=443)	#36 Gets along less well with teachers	x	
	#54 Considers parents more strict		x
	#62 Dates more		x
	#66 Is more likely to smoke		x
	#69 Considers school chief problem		x

QUESTION #31. I do, do not have a regular time for study.

The question of a regular time for study was not found to be significant (see Table 32).

TABLE 32

ANALYSIS OF QUESTIONNAIRE DATA: REGULAP TIME FOR STUDY

Sex	Comparison	Low Achievers	Average Achievers	High Achievers	χ^2	p
Male	Regular Time	176	143	126		
	No	160	97	96	3.0	N.S.
Female	Regular Time	109	123	159		
	No	102	107	117	1.8	N.S.

For those students who report that they do have a regular time for study, the following related items were found to be significant:

Response to #31: Yes

Sex	Significant Cross-Items	.05	.01
Male (N=444)	#32 Has no definite plan for study		x
	#33 Finds it hard to concentrate		x
	#35 Troubled by lack of interest and study		x
	#36 Gets along less well with teachers		x
	#47 Is less likely planning on profession	x	
	#49 Lacks confidence in occupational goal		x
	#50 Feels goal may be blocked		x
	#62 Dates more		x
	#69 Considers school chief problem		x
	#74 Has more than one sibling	x	
Female (N=391)	#33 Finds it hard to concentrate		x
	#49 Lacks confidence in occupational goal	x	
	#50 Feels goal may be blocked	x	
	#54 Feels parents are more strict	x	
	#62 Dates more		x
	#69 Considers school chief problem	x	
	#74 Has more than one sibling	x	

For those students who report that they do not have a regular time for study, the following related items were found to be significant:

Response to #31: No

Sex	Significant Cross-Items	.05	.01
Male (N=353)	#33 Finds it hard to concentrate		x
	#36 Gets along less well with teachers		x
	#43 Is less likely planning on college		x
	#47 Is less likely planning on profession		x
	#49 Lacks confidence in occupational goal	x	
	#59 Goes out more evenings		x
	#61 Has fewer problems making friends		x
	#69 Considers school chief problem		x
Female (N=326)	#33 Finds it hard to concentrate		x
	#36 Gets along less well with teachers		x
	#40 Has been in trouble in school		x
	#43 Is less likely planning on college		x
	#56 Parents encourage and help her	x	
	#62 Dates more		x
	#69 Considers school chief problem	x	

QUESTION #32. I do, do not have a definite plan for studying.

The question of a plan for study was also examined. More male high achievers have a definite study plan that they follow (see Table 33).

TABLE 33

ANALYSIS OF QUESTIONNAIRE DATA: DEFINITE PLAN FOR STUDY

Sex	Comparison	Low Achievers	Average Achievers	High Achievers	X^2	p
Male	Definite Plan	120	89	106		
	No	212	150	116	8.3	.02
Female	Definite Plan	91	85	120		
	No	118	144	154	2.7	N.S.

For those students who report that they do have a definite plan for study, the following items were found to be significant:

Response to #32: Yes

Sex	Significant Cross-Items	.05	.01
Male (N=314)	#33 Finds it hard to concentrate		x
	#35 Troubled by lack of interest and study		x
	#36 Gets along less well with teachers	x	
	#40 Has been in trouble in school	x	
	#43 Is less likely planning on college		x
	#47 Is less likely planning on profession		x
	#48 Does not see profession as eventual job	x	
	#49 Lacks confidence in occupational goal	x	
	#59 Goes out more evenings	x	
	#62 Dates more	x	
	#69 Considers school chief problem	x	
Female (N=296)	#33 Finds it hard to concentrate		x
	#35 Troubled by lack of interest and study		x
	#36 Gets along less well with teachers	x	
	#39 Is handicapped by lack of interest		x
	#40 Has been in trouble in school	x	
	#62 Dates more		x

For those students who report that they do not have a definite plan for study, the following items were found to be significant:

Response to #32: No

Sex	Significant Cross-Items	.05	.01
Male (N=478)	#33 Finds it hard to concentrate		x
	#36 Gets along less well with teachers		x
	#43 Is less likely planning on college	x	
	#47 Is less likely planning on profession	x	
	#49 Lacks confidence in occupational goal		x
	#59 Goes out more evenings		x
	#61 Has fewer problems making friends		x
	#62 Dates more		x
	#69 Considers school chief problem		x

Response to #32: No (Continued)

Sex	Significant Cross-Items	.05	.01
Female (N=416)	#33 Finds it hard to concentrate		x
	#36 Gets along less well with teachers	x	
	#43 Is less likely planning on college	x	
	#47 Is less likely planning on profession	x	
	#62 Dates more		x
	#69 Considers school chief problem		x

QUESTION #33. It is, is not easy for me to concentrate.

The problem of concentrating on studies turned out to be a highly significant item. A much higher proportion of low achievers report that they find it hard to concentrate (see Table 34).

TABLE 34

ANALYSIS OF QUESTIONNAIRE DATA:
IS IT EASY TO CONCENTRATE?

Sex	Comparison	Low Achievers	Average Achievers	High Achievers	X^2	p
Male	Yes	165	144	170		
	No	164	87	49	28.6	.001
Female	Yes	107	141	203		
	No	102	86	69	28.3	.001

For those students who report that it is easy to concentrate, the following related items were found to be significant:

Response to #33: Yes

Sex	Significant Cross-Items	.05	.01
Male (N=479)	#35 Troubled by lack of interest and study		x
	#36 Gets along less well with teachers		x
	#37 Says teachers have tried to help	x	
	#39 Is handicapped by lack of interest	x	
	#43 Is less likely planning on college		x
	#47 Is less likely planning on profession		x
	#48 Does not see profession as eventual job		x
	#49 Lacks confidence in occupational goal		x
	#59 Goes out more evenings	x	
	#61 Has fewer problems making friends		x
	#62 Dates more	x	
	#69 Considers school chief problem		x
Female (N=451)	#36 Gets along less well with teachers	x	
	#37 Says teachers have tried to help		x
	#40 Has been in trouble in school	x	
	#43 Is less likely planning on college	x	
	#48 Does not see profession as eventual job	x	
	#50 Feels goal may be blocked	x	
	#62 Dates more		x
	#69 Considers school chief problem		x

For those students who report it is not easy to concentrate, the following items were found to be significant:

Response to #33: No

Sex	Significant Cross-Items	.05	.01
Male (N=300)	#36 Gets along less well with teachers		x
	#59 Goes out more evenings		x
	#69 Considers school chief problem	x	
Female (N=257)	#62 Dates more		x

QUESTION #34. Reading is, is not a problem to me.

Few of these high-potential students respond that they find reading a problem, and there is no difference in the responses of the low, average, and high achievers (see Table 35).

TABLE 35

ANALYSIS OF QUESTIONNAIRE DATA:
IS READING A PROBLEM?

Sex	Comparison	Low Achievers	Average Achievers	High Achievers	χ^2	p
Male	Yes No	41 295	32 206	25 197	.4	N.S.
Female	Yes No	17 194	17 213	13 261	2.4	N.S.

For those students who report that reading is a problem to them, the following related items were found to be significant:

Response to #34: Yes

Sex	Significant Cross-Items	.05	.01
Male (N=98)	#56 Feels parents encourage and help #61 Has no problems making friends #69 Feels school chief problem	x x x	
Female (N=47)	#39 Is handicapped by lack of interest #74 Has not more than one sibling	x x	

For those students who report that reading is not a problem, the following related items were found to be significant:

Response to #34: No

Sex	Significant Cross-Items	.05	.01
Male (N=697)	#35 Troubled by lack of interest and study		x
	#36 Gets along less well with teachers		x
	#47 Is less likely planning on profession		x
	#48 Does not see profession as eventual job		x
	#59 Goes out more evenings		x
	#61 Has fewer problems making friends		x
	#69 Considers school chief problem		x
	#72 Is less satisfied with self	x	
Female (N=668)	#36 Gets along less well with teachers	x	
	#54 Considers parents more strict	x	
	#69 Considers school chief problem		x

QUESTION #35. What part of school life has caused you trouble or been a problem to you? (1) Subjects too easy (2) Subjects too difficult (3) Lack of ability (4) Lack of study (5) Lack of interest (6) Problems with teachers (7) Problems with other students (8) Poor study habits (9) Others (describe) Explain why this has caused you trouble.

The greatest number of responses to this question were Lack of interest and Lack of study. Very few students marked Lack of ability or Problems with other students.

The responses of low, average, and high achievers are compared in Table 36. Male low achievers mark Lack of interest significantly more often. To a highly significant degree, male and female low achievers attribute their trouble in school to Lack of study. High achievers report Subjects too easy, and low achievers report Poor study habits.

TABLE 36

ANALYSIS OF QUESTIONNAIRE DATA: WHAT HAS CAUSED TROUBLE IN SCHOOL?

Sex	Comparison	Low Achievers	Average Achievers	High Achievers	X^2	p
Male	Lack of Interest	151	104	69		
	Other	186	136	155	12.1	.01
Female	Lack of Interest	84	82	95		
	Other	127	148	182	1.6	N.S.
Male	Lack of Study	92	52	22		
	Other	245	188	202	25.0	.001
Female	Lack of Study	58	35	34		
	Other	153	195	243	20.4	.001
Male	Subjects Too Difficult	19	15	9		
	Other	318	225	215	1.0	N.S.
Female	Subjects Too Difficult	22	17	27		
	Other	189	213	250	1.3	N.S.
Male	Subjects Too Easy	10	18	33		
	Other	327	222	191	26.6	.001
Female	Subjects Too Easy	6	13	31		
	Other	205	217	246	13.6	.01
Male	Poor Study Habits	89	51	28		
	Other	248	189	196	15.7	.001
Female	Poor Study Habits	51	38	30		
	Other	160	192	247	15.3	.001
Male	Problems With Teachers	34	20	33		
	Other	303	220	191	5.2	N.S.
Female	Problems With Teachers	18	18	28		
	Other	193	212	249	.7	N.S.

For those students who report their trouble due to lack of study or lack of interest (responses #4 or #5), the following related items were found to be significant:

Response to #35: #4 and/or #5

Sex	Significant Cross-Items	.05	.01
Male (N=241)	#43 Is less likely planning on college	x	
	#48 Does not see profession as eventual job	x	
Female (N=204)	#36 Gets along less well with teachers	x	
	#49 Lacks confidence in occupational goal	x	
	#50 Feels goal may be blocked		x
	#62 Dates more		x

For those students who report their trouble due to something other than lack of study or lack of interest (responses other than #4 or #5), the following related items were found to be significant:

Response to #35: Other than #4 or #5

Sex	Significant Cross-Items	.05	.01
Male (N=519)	#36 Gets along less well with teachers		x
	#43 Is less likely planning on college	x	
	#49 Lacks confidence in occupational goal		x
	#50 Feels goal may be blocked		x
	#62 Dates more		x
Female (N=472)	#36 Gets along less well with teachers	x	
	#54 Considers parents more strict	x	
	#62 Dates more		x

QUESTION #36. I usually get along with teachers: (1) Very well (2) Fairly well (3) Not very well

The student's reaction to his teachers was found to be a significant variable in his achievement pattern (see Table 37).

TABLE 37

ANALYSIS OF QUESTIONNAIRE DATA: GETTING ALONG WITH TEACHERS

Sex	Comparison	Low Achievers	Average Achievers	High Achievers	X^2	p
Male	Very Well	149	139	153		
	Fairly, Not Very Well	185	101	69	32.7	.001
Female	Very Well	108	137	189		
	Fairly, Not Very Well	103	92	88	14.4	.001

The results indicate that a much greater proportion of high-achieving boys and girls report that they get along "very well" with their teachers.

For those students who report that they get along with teachers very well (response #1), the following related items were found to be significant:

Response to #36: #1

Sex	Significant Cross-Items	.05	.01
Male (N=441)	#39 Is handicapped by lack of interest	x	
	#44 Mother less interested in college	x	
	#47 Is less likely planning on profession	x	
	#48 Does not see profession as eventual job	x	
	#61 Has fewer problems making friends		x
	#62 Dates more	x	
	#66 Is more likely to smoke	x	
	#69 Considers school chief problem		x
Female (N=434)	#54 Considers parents more strict	x	
	#62 Dates more		x
	#66 Is more likely to smoke		x
	#69 Considers school chief problem		x

For those students who report that they get along with teachers fairly well or not very well (responses #2 or #3), the following related items were found to be significant:

Response to #36: #2 or #3

Sex	Significant Cross-Items	.05	.01
Male (N=355)	#43 Is less likely planning on college		x
	#50 Feels goal may be blocked		x
	#59 Goes out more evenings		x
	#61 Has fewer problems making friends	x	
	#62 Dates more	x	
	#66 Is more likely to smoke		x
Female (N=283)	#50 Feels goals may be blocked	x	
	#54 Considers parents more strict	x	
	#58 Feels superior at making friends	x	
	#62 Dates more		x
	#63 Has more problems with siblings	x	
	#66 Is more likely to smoke		x

QUESTION #37. Have teachers sometimes helped you or taken a special interest in you? (1) Yes (2) No. Explain why or why not.

The next question gives more information about student reactions to teachers (see Table 38).

TABLE 38

ANALYSIS OF QUESTIONNAIRE DATA:
HELP AND INTEREST FROM TEACHERS

Sex	Comparison	Low Achievers	Average Achievers	High Achievers	X^2	p
Male	Yes	248	163	176		
	No	85	71	45	5.9	.05
Female	Yes	163	177	226		
	No	44	48	47	1.6	N.S.
Male	I am Good Student	54	47	74		
	I was Having Trouble	59	36	24	17.2	.001
Female	I am Good Student	38	42	82		
	I was Having Trouble	47	42	31	18.1	.001

A majority of all the groups report that teachers have helped them and taken an interest in them. More male high achievers report this interest and help. However, the reasons for the teacher interest differ: For the high achiever the reason is I am a good student; for the low achiever it is I was having trouble.

For those students who report that teachers have helped or taken an interest, the following related items were found to be significant:

Response to #37: Yes

Sex	Significant Cross-Items	.05	.01
Male (N=586)	#38 Goes to teachers for help		x
	#43 Is less likely planning on college	x	
	#49 Is not confident in reaching goal		x
	#50 Feels goal may be blocked		x
Female (N=566)	#38 Goes to teachers for help		x
	#43 Is less likely planning on college	x	
	#50 Feels goal may be blocked	x	

For those who report that teachers have not helped or taken an interest, the following related items were found to be significant:

Response to #37: No

Sex	Significant Cross-Items	.05	.01
Male (N=201)	#43 Is less likely planning on college		x
	#48 Doesn't see profession as eventual job		x
	#49 Is not confident in reaching goal	x	
	#72 Is less satisfied with self		x
Female (N=139)	#50 Feels goal may be blocked		x

QUESTION #38. Do you ever go to them for help with school work? (1) Yes (2) No

The breakdown of this question, given in Table 39, shows that the majority of the respondents go to teachers for help. No differences were apparent in the groups.

TABLE 39

ANALYSIS OF QUESTIONNAIRE DATA:
GO TO TEACHERS FOR HELP

Sex	Comparison	Low Achievers	Average Achievers	High Achievers	X^2	p
Male	Go For Help Do Not	189 145	144 94	123 99	1.2	N.S.
Female	Go For Help Do Not	135 72	153 76	173 99	.6	N.S.

For those students who report that they do go to teachers for help, the following related items were found to be significant:

Response to #38: Yes

Sex	Significant Cross-Items	.05	.01
Male (N=456)	#43 Is less likely planning on college		x
Female (N=460)	#43 Is less likely planning on college	x	

For those students who report that they do not go to teachers for help, the following related items were found to be significant:

Response to #38: No

Sex	Significant Cross-Items	.05	.01
Male (N=337)	#39 Is handicapped by lack of interest	x	
	#43 Is less likely planning on college		x
	#50 Feels goal may be blocked		x
Female (N=247)	#40 Has been in trouble in school		x

QUESTION #39. Many students say they could do better in school than they are doing. What do you feel prevents you from getting higher marks?

The greatest number of replies to this question were "not enough study," "lack of interest," and "poor study habits" (see Table 40).

TABLE 40

ANALYSIS OF QUESTIONNAIRE DATA:
GETTING BETTER MARKS

Sex	Comparison	Low Achievers	Average Achievers	High Achievers	X^2	p
Male	Not Enough Study	95	74	59		
	Other	242	166	165	1.1	N.S.
Female	Not Enough Study	60	63	71		
	Other	151	167	206	.4	N.S.
Male	Lack of Interest	75	38	29		
	Other	262	202	195	8.8	.02
Female	Lack of Interest	38	30	33		
	Other	173	200	244	3.8	N.S.
Male	Poor Study Habits	28	18	11		
	Other	309	222	213	2.3	N.S.
Female	Poor Study Habits	16	15	12		
	Other	195	215	265	2.4	N.S.

Only one difference appears: More male low achievers feel that their lack of interest interferes with their school progress. It is interesting to observe that about equal proportions of high and low achievers feel that they do not study enough and that their study habits are weak. It is of interest to compare this result with the responses to Question #35, reported in Table 36. When the question asks what it is that prevents the student from getting higher marks, then both high- and low-achieving students might reply "Not enough study." But when the question asks what has caused the student trouble in school, then more low achievers answer "Lack of study."

For those students who report that lack of study prevents higher marks, the following related items were found to be significant:

Response to #39: Lack of Study

Sex	Significant Cross-Items	.05	.01
Male (N=227)	#43 Is less likely planning on college	x	
	#49 Is not confident of reaching goal	x	
Female (N=194)	#54 Considers parents more strict	x	
	#58 Feels superior in making friends	x	

For those students who report that something other than lack of study prevents higher marks, the following related items were found to be significant:

Response to #39: Other than Lack of Study

Sex	Significant Cross-Items	.05	.01
Male (N=573)	#43 Is less likely planning on college		x
	#45 Fewer fathers encourage college	x	
	#49 Is not confident of reaching goal		x
	#50 Feels goal may be blocked	x	
	#51 Discusses future less with parents	x	
	#59 Goes out more evenings		x

Response to #39: Other than Lack of Study (Continued)

Sex	Significant Cross-Items	.05	.01
Female (N=523)	#43 Is less likely planning on college		x
	#49 Is not confident of reaching goal	x	
	#50 Feels goal may be blocked	x	
	#54 Considers parents more strict	x	

QUESTION #40. Have you ever had trouble in school or been considered a problem? (1) Yes (2) No. Why?

This question, again, focuses on the relation of the student to the school. Significantly more low achievers of both sexes answer this in the affirmative: they have been in trouble in school (see Table 41).

TABLE 41

ANALYSIS OF QUESTIONNAIRE DATA: TROUBLE IN SCHOOL

Sex	Comparison	Low Achievers	Average Achievers	High Achievers	X^2	p
Male	Yes	113	62	49		
	No	217	177	173	10.6	.01
Female	Yes	43	27	32		
	No	166	203	242	9.3	.01

For those who report that they have been in trouble in school, the following related items were found to be significant:

Response to #40: Yes

Sex	Significant Cross-Items	.05	.01
Male (N=223)	#43 Is less likely planning on college	x	
	#46 Wants more education than father	x	
	#49 Is not confident of goal	x	
	#51 Discusses future with parents less		x
Female (N=102)	None		

For those students who report that they have not been in trouble in school, the following related items were found to be significant:

Response to #40: No

Sex	Significant Cross-Items	.05	.01
Male (N=567)	#43 Is less likely planning on college		x
	#48 Doesn't see profession as eventual job	x	
	#49 Is not confident of goal		x
	#50 Feels goal may be blocked		x
Female (N=610)	#49 Is not confident of goal	x	
	#50 Feels goal may be blocked		x
	#54 Considers parents more strict	x	

QUESTION #41. I like this particular school: (1) Very well (2) Fairly well (3) Not very well

The response to Question #41 indicates that most of these students like the school they are attending very well. No significant differences appeared (see Table 42).

TABLE 42

ANALYSIS OF QUESTIONNAIRE DATA: I LIKE THIS PARTICULAR SCHOOL

Sex	Comparison	Low Achievers	Average Achievers	High Achievers	X^2	p
Male	Very Well	184	139	136		
	Not Very Well	22	15	9	2.1	N.S.
Female	Very Well	107	115	156		
	Not Very Well	16	20	13	4.0	N.S.

For those students who report that they like their present school very well, the following related items were found to be significant:

Response to #41: #1

Sex	Significant Cross-Items	.05	.01
Male (N=459)	#43 Is less likely planning on college	x	
	#47 Is less likely planning on profession	x	
	#48 Doesn't see profession as eventual job		x
	#49 Is not confident of goal		x
	#50 Feels goal may be blocked	x	
	#56 Says parents encourage and help	x	
Female (N=378)	#42 Feels teachers should be improved		x

For those students who report that they like their present school fairly well or not very well, the following related items were found to be significant:

Response to #41: #2 or #3

Sex	Significant Cross-Items	.05	.01
Male (N=340)	#43 Is less likely planning on college		x
	#47 Is less likely planning on profession		x
	#49 Is not confident of goal		x
Female (N=337)	#47 Is less likely planning on profession	x	
	#49 Is not confident of goal		x
	#50 Feels goal may be blocked		x

QUESTION #42. What could this school do to make it better?

The responses to this open-ended question were grouped into several general categories: improve the teachers, improve the students, increase the privileges, or the school is good as it is. The comparison of the frequency of these responses appears in Table 43:

TABLE 43

ANALYSIS OF QUESTIONNAIRE DATA:
MAKING THE SCHOOL BETTER

Sex	Comparison	Low Achievers	Average Achievers	High Achievers	X^2	p
Male	Improve Teachers Other	76 261	54 186	50 174	.0	N.S.
Female	Improve Teachers Other	73 138	82 148	71 206	7.2	.05
Male	Improve Students Other	22 315	15 225	11 213	.5	N.S.
Female	Improve Students Other	17 194	29 201	30 247	2.3	N.S.
Male	Increase Privileges Other	18 319	12 228	12 212	.0	N.S.
Female	Increase Privileges Other	11 200	7 223	11 266	1.2	N.S.
Male	Good as Is Other	44 293	11 229	25 199	11.6	.01
Female	Good as Is Other	16 195	13 217	17 260	.6	N.S.

A larger proportion of female low achievers are critical of their teachers. Surprisingly, more male low achievers rate the school Good as is. (This question was not compared to related items.)

QUESTION #43. How far do you want to go in school? (1) I want to quit soon (2) Finish high school (3) Business or trade school (4) Technical School (5) Junior college (6) College (7) Other (describe)

The responses to question #43 indicate that the great majority of these students are planning on going to college. Virtually none want to quit soon, and small percentages plan on attending a business or trade school (see Table 44).

TABLE 44

ANALYSIS OF QUESTIONNAIRE DATA:
HOW FAR DO YOU WANT TO GO IN SCHOOL?

Sex	Comparison	Low Achievers	Average Achievers	High Achievers	X^2	p
Male	College Other	261 76	206 34	204 20	19.3	.001
Female	College Other	154 57	185 45	227 50	6.2	.05
Male	Business, Tech. School Other	19 318	5 235	3 221	9.3	.01
Female	Business, Tech. School Other	19 192	16 214	16 261	1.8	N.S.
Male	Finish High School Other	24 313	7 233	3 221	12.5	.01
Female	Finish High School Other	16 195	14 216	12 265	2.2	N.S.

College is the goal of a significantly higher proportion of the high achievers. More male low achievers have plans for business and technical schools or for just finishing high school.

For those students who report that they plan to attend college, the following related items were found to be significant:

Response to #43: College

Sex	Significant Cross-Items	.05	.01
Male (N=670)	#49 Is less confident of goal		x
	#50 Feels goal may be blocked		x
	#51 Discusses future with parents less		x
	#59 Goes out more evenings		x
	#62 Dates more		x
	#69 Considers school chief problem		x
Female (N=566)	#58 Feels superior at making friends	x	
	#62 Dates more		x
	#69 Considers school chief problem		x

For those students who report that they plan something other than college, the following related items were found to be significant:

Response to #43: Other than College

Sex	Significant Cross-Items	.05	.01
Male (N=130)	#45 Father encourages college	x	
	#54 Considers parents more strict	x	
	#69 Considers school chief problem		x
Female (N=152)	#62 Dates more	x	

QUESTION #44. How far does your mother want you to go in school?

The influence of parental aspirations was investigated in the next three questions. First, the mother (see Table 45).

TABLE 45

ANALYSIS OF QUESTIONNAIRE DATA:
HOW FAR DOES YOUR MOTHER WANT YOU TO GO IN SCHOOL?

Sex	Comparison	Low Achievers	Average Achievers	High Achievers	X^2	p
Male	College Other	285 52	211 29	191 33	1.1	N.S.
Female	College Other	101 50	172 58	212 65	.1	N.S.
Male	Doesn't Care Other	24 313	16 224	13 211	.3	N.S.
Female	Doesn't Care Other	19 192	22 208	25 252	.0	N.S.

It appears that the proportion of mothers who want their child to go to college or who do not care is about the same in the different groups.

For those students who report that the mother wishes them to attend college, the following related items were found to be significant:

Response to #44: College

Sex	Significant Cross-Items	.05	.01
Male (N=686)	#47 Is less likely planning on a profession		x
	#48 Doesn't see profession as eventual job		x
	#49 Is not confident of goal		x
	#50 Feels goal may be blocked		x
	#51 Discusses future with parents less		x
	#59 Goes out more evenings		x
	#62 Dates more		x
	#66 Is more likely to smoke		x
	#69 Considers school chief problem		x

Response to #44: College (Continued)

Sex	Significant Cross-Items	.05	.01
Female (N=545)	#50 Feels goal may be blocked	x	
	#62 Dates more		x
	#66 Is more likely to smoke		x
	#69 Considers school chief problem		x
	#70 Discusses problems less		x

For those students who report that the mother's wish is for something other than college, the following related items were found to be significant:

Response to #44: Other than College

Sex	Significant Cross-Items	.05	.01
Male (N=114)	#59 Goes out more evenings		x
	#66 Is more likely to smoke		x
	#69 Considers school chief problem		x
Female (N=173)	#62 Dates more	x	

QUESTION #45. How far does your father want you to go in school?

The responses to this question indicate that about equal proportions of fathers also want their child to attend college (see Table 46).

TABLE 46

ANALYSIS OF QUESTIONNAIRE DATA:
HOW FAR DOES YOUR FATHER WANT YOU TO GO IN SCHOOL?

Sex	Comparison	Low Achievers	Average Achievers	High Achievers	X^2	p
Male	College Other	272 65	206 34	184 40	2.5	N.S.
Female	College Other	161 50	169 61	211 66	.6	N.S.
Male	Doesn't Care Other	25 312	17 223	14 210	.2	N.S.
Female	Doesn't Care Other	12 199	21 209	24 253	2.0	N.S.

For those students who report that their father wishes them to attend college, the following related items were found to be significant:

Response to #45: College

Sex	Significant Cross-Items	.05	.01
Male (N=662)	#47 Is less likely planning on profession		x
	#48 Doesn't see profession as eventual job	x	
	#49 Is not confident of goal		x
	#50 Feels goal may be blocked		x
	#51 Discusses future with parents less	x	
	#56 Feels parents encourage and help	x	
	#59 Goes out more evenings		x
	#62 Dates more		x
	#66 Is more likely to smoke		x
	#69 Considers school chief problem		x
Female (N=541)	#62 Dates more		x
	#66 Is more likely to smoke		x
	#69 Considers school chief problem		x
	#70 Discusses problems less		x

For those students who report that their father wishes something other than college, the following related items were found to be significant:

Response to #45: Other than College

Sex	Significant Cross-Items	.05	.01
Male (N=139)	#51 Discusses future with parents less		x
	#59 Goes out more evenings	x	
	#66 Is more likely to smoke		x
Female (N=177)	#49 Is not confident of goal		x
	#50 Feels goal may be blocked	x	
	#62 Dates more		x

QUESTION #46. Is this further than he went?

A significantly larger number of low-achieving males answer this question affirmatively. In other words, these fathers did not attend college, and they wish for their sons to do so (see Table 47).

TABLE 47

ANALYSIS OF QUESTIONNAIRE DATA:
IS THIS FARTHER THAN FATHER WENT IN SCHOOL?

Sex	Comparison	Low Achievers	Average Achievers	High Achievers	X^2	p
Male	Yes	241	169	143	6.4	.05
	No	79	65	76		
Female	Yes	137	135	180	2.2	N.S.
	No	66	82	89		

For those students who report that their father's aspiration is farther than he went in school, the following related items were found to be significant:

Response to #46: Yes

Sex	Significant Cross-Items	.05	.01
Male (N=553)	#47 Is less likely planning on profession		x
	#48 Doesn't see profession as eventual job	x	
	#49 Is not confident of goal	x	
	#51 Doesn't discuss future with parents		x
	#59 Goes out more evenings	x	
	#62 Dates more	x	
	#66 Is more likely to smoke		x
	#69 Considers school chief problem		x
Female (N=452)	#49 Is not confident of goal	x	
	#50 Feels goal may be blocked		x
	#52 Fewer parents agree with plans	x	
	#62 Dates more		x
	#66 Is more likely to smoke		x
	#69 Considers school chief problem		x
	#70 Discusses problems less		x

For those students who report that their father's aspiration is not farther than he went in school, the following related items were found to be significant:

Response to #46: No

Sex	Significant Cross-Items	.05	.01
Male (N=220)	#49 Is not confident of goal		x
	#50 Feels goal may be blocked		x
	#51 Doesn't discuss future with parents	x	
	#59 Goes out more evenings	x	
	#62 Dates more		x
	#69 Considers school chief problem	x	
Female (N=231)	#47 Is less likely planning on profession	x	
	#54 Considers parents more strict		x
	#62 Dates more		x
	#66 Is more likely to smoke	x	

QUESTION #47. What do you think your first full-time job will be?

Response to this question tended to be don't know or a no response. However, some difference did appear: a higher proportion of high-achieving boys feel that their first job will be a professional one (see Table 48).

TABLE 48

ANALYSIS OF QUESTIONNAIRE DATA:
WHAT DO YOU THINK YOUR FIRST FULL-TIME JOB WILL BE?

Sex	Comparison	Low Achievers	Average Achievers	High Achievers	X^2	p
Male	No Idea, No Response Other	148 189	122 118	93 131	4.4	N.S.
Female	No Idea, No Response Other	60 151	61 169	92 185	2.7	N.S.
Male	Professional Other	57 280	39 201	71 153	19.2	.001
Female	Professional Other	53 158	71 159	87 190	2.6	N.S.

For those students who feel that their first job will be a professional one, the following related items were found to be significant:

Response to #47: Professional

Sex	Significant Cross-Items	.05	.01
Male (N=167)	#49 Is not confident of goal #50 Feels goal may be blocked #72 Feels less satisfied with self	x x 	 x
Female (N=211)	#54 Considers parents more strict	x	

For those students who feel that their first job will be other than professional, the following related items were found to be significant:

Response to #47: Other than Professional

Sex	Significant Cross-Items	.05	.01
Male (N=634)	#48 Doesn't see profession as eventual job		x
	#49 Is not confident of goal		x
	#51 Discusses future with parents less	x	
	#59 Goes out more evenings	x	
Female (N=507)	#59 Goes out more evenings		x

QUESTION #48. What job would you like to have ten years from now?

When asked about the job they anticipated having ten years from now, most of these students point to professional work, but the higher proportion of high-achieving males still holds true (see Table 49).

TABLE 49

ANALYSIS OF QUESTIONNAIRE DATA:
WHAT JOB WOULD YOU LIKE TO HAVE TEN YEARS FROM NOW?

Sex	Comparison	Low Achievers	Average Achievers	High Achievers	X^2	p
Male	Professional	211	152	168		
	Other	126	88	56	10.4	.01
Female	Professional	110	138	156		
	Other	101	92	121	2.7	N.S.

For those students who do anticipate professional work in ten years, the following related items were found to be significant:

Response to #48: Professional

Sex	Significant Cross-Items	.05	.01
Male (N=531)	#49 Is not confident of goal		x
	#50 Feels goal may be blocked		x
	#62 Dates more		x
	#69 Considers school chief problem		x
Female (N=404)	#49 Is not confident of goal	x	
	#52 More parents agree with plans	x	
	#62 Dates more		x
	#69 Considers school chief problem		x

For those students who do not anticipate professional work in ten years, the following related items were found to be significant:

Response to #48: Other than Professional

Sex	Significant Cross-Items	.05	.01
Male (N=270)	#51 Discusses future with parents less	x	
	#59 Goes out more evenings		x
	#69 Considers school chief problem		x
Female (N=314)	#62 Dates more		x
	#69 Considers school chief problem	x	

QUESTION #49. Do you feel confident of reaching this job? (1) Yes (2) No

The question of confidence in reaching the selected occupation disclosed differences: To a highly significant degree, low-achieving boys are less confident of reaching their goal (see Table 50).

TABLE 50

ANALYSIS OF QUESTIONNAIRE DATA:
DO YOU FEEL CONFIDENT OF REACHING THIS JOB?

Sex	Comparison	Low Achievers	Average Achievers	High Achievers	X^2	p
Male	Yes No	223 85	172 37	179 23	20.8	.001
Female	Yes No	142 51	166 41	201 44	4.8	N.S.

For those students who report that they are confident of reaching their occupational goal, the following related items were found to be significant:

Response to #49: Yes

Sex	Significant Cross-Items	.05	.01
Male (N=574)	#50 Feels poor marks may block goal		x
	#59 Goes out more evenings		x
	#61 Has fewer problems making friends		x
	#62 Dates more		x
	#69 Considers school chief problem		x
	#72 Is less satisfied with self		x
Female (N=509)	#50 Feels poor marks may block goal		x
	#62 Dates more		x
	#69 Considers school chief problem		x
	#70 Discusses problems less	x	

For those students who report that they are not confident of reaching their occupational goal, the following related items were found to be significant:

Response to #49: No

Sex	Significant Cross-Items	.05	.01
Male (N=145)	#50 Feels poor marks may block goal		x
	#61 Has fewer problems making friends		x
	#65 Has fewer health problems	x	
	#69 Considers school chief problem		x
Female (N=136)	#50 Feels poor marks may block goal	x	
	#69 Considers school chief problem	x	
	#70 Discusses problems less	x	

QUESTION #50. Is there anything that you feel will keep you from getting this job? Explain.

The responses to the problem of something keeping the student from reaching his chosen occupation are provided in Table 51.

TABLE 51

ANALYSIS OF QUESTIONNAIRE DATA:
ANYTHING KEEP YOU FROM GETTING THIS JOB?

Sex	Comparison	Low Achievers	Average Achievers	High Achievers	X^2	p
Male	Yes	218	135	119		
	No	69	64	76	12.3	.01
Female	Yes	140	133	148		
	No	40	69	84	10.2	.01

A greater proportion of low achievers feel that they will be unable to attain their occupational goal. A further analysis of this same question is given in Table 52. The thing that will block the goal is seen by some students as lack of ambition or lack of ability, but these are not significant. The real difference appears in the response, poor marks. Low-achieving children are much more likely to see their poor scholastic record as a block to the future occupation.

TABLE 52

ANALYSIS OF QUESTIONNAIRE DATA:
WHAT WILL KEEP YOU FROM CHOSEN OCCUPATION?

Sex	Comparison	Low Achievers	Average Achievers	High Achievers	X^2	p
Male	Lack of Ambition Other	34 303	16 224	17 207	2.3	N.S.
Female	Lack of Ambition Other	13 198	13 217	7 270	4.2	N.S.
Male	Lack of Ability Other	21 316	18 222	21 203	1.8	N.S.
Female	Lack of Ability Other	23 188	14 216	26 251	3.4	N.S.
Male	Poor Marks Other	101 236	45 195	10 214	55.8	.001
Female	Poor Marks Other	50 161	31 199	16 261	32.8	.001

For those students who feel that something will prevent them from reaching their occupational goal, the following related items were found to be significant:

Response to #50: Yes

Sex	Significant Cross-Items	.05	.01
Male (N=472)	#51 Discusses future with parents less	x	
	#62 Dates more	x	
	#69 Considers school chief problem		x
Female (N=421)	#62 Dates more		x
	#69 Considers school chief problem		x
	#70 Discusses problems less	x	
	#74 Has more than two siblings	x	

For those students who feel that nothing will prevent them from reaching their occupational goal, the following related items were found to be significant:

Response to #50: No

Sex	Significant Cross-Items	.05	.01
Male (N=209)	#56 Feels parents encourage and help		x
	#59 Goes out more evenings	x	
Female (N=193)	#54 Considers parents more strict	x	
	#62 Dates more		x
	#68 Is less satisfied with physical self	x	
	#69 Considers school chief problem	x	

QUESTION #51. Have you discussed your future plans with your parents?

The reaction to this question shows that high-achieving males are more likely to have discussed plans with their parents (see Table 53).

TABLE 53

ANALYSIS OF QUESTIONNAIRE DATA: DISCUSSED PLANS WITH PARENTS?

Sex	Comparison	Low Achievers	Average Achievers	High Achievers	X^2	p
Male	Yes No	271 61	205 32	205 19	10.7	.01
Female	Yes No	185 20	204 24	248 28	.0	N.S.

For those students who report that they have discussed future plans with parents, the following related items were found to be significant:

Response to #51: Yes

Sex	Significant Cross-Items	.05	.01
Male (N=681)	#59 Goes out more evenings		x
	#62 Dates more		x
Female (N=637)	#54 Considers parents more strict	x	
	#62 Dates more		x
	#70 Discusses problems less		x

For those students who report that they have not discussed future plans with parents, the following related items were found to be significant:

Response to #51: No

Sex	Significant Cross-Items	.05	.01
Male (N=112)	#62 Dates more	x	
Female (N=72)	#62 Dates more		x
	#74 Has more than two siblings	x	

QUESTION #52. Do your parents agree with your plans? (1) Yes (2) No. Explain.

Equal proportions of high and low achievers report that parents agree with their plans. This item was not significant (see Table 54).

TABLE 54

ANALYSIS OF QUESTIONNAIRE DATA:
PARENTS AGREE WITH PLANS?

Sex	Comparison	Low Achievers	Average Achievers	High Achievers	X^2	p
Male	Yes Other Response	259 78	190 50	186 38	3.0	N.S.
Female	Yes Other Response	159 52	169 61	227 50	5.6	N.S.

For those students who report that the parents do agree with their future plans, the following related items were found to be significant:

Response to #52: Yes

Sex	Significant Cross-Items	.05	.01
Male (N=635)	#69 Considers school chief problem		x
Female (N=555)	#69 Considers school chief problem		x
	#70 Discusses problems less	x	

For those students who report that the parents do not agree with their future plans, no related items were found to be significant.

QUESTION #53. Have you discussed your future plans with your counselor?

There also was no pattern to the question of having discussed plans with the school counselor. (Since the questionnaire was completed after only one semester of high school, the students had not had much contact with the counselor.)

TABLE 55

ANALYSIS OF QUESTIONNAIRE DATA:
DISCUSSED PLANS WITH COUNSELOR?

Sex	Comparison	Low Achievers	Average Achievers	High Achievers	X^2	p
Male	Yes Other Response	50 287	37 203	42 182	1.5	N.S.
Female	Yes Other Response	35 176	47 183	51 226	1.0	N.S.

For those students who report that they have discussed plans with the counselor, the following related items were found to be significant:

Response to #53: Yes

Sex	Significant Cross-Items	.05	.01
Male (N=129)	None		
Female (N=133)	#56 Feels parents encourage and help less	x	

For those students who report that they have not discussed plans with the counselor, the following related items were found to be significant:

Response to #53: No

Sex	Significant Cross-Items	.05	.01
Male (N=647)	#69 Considers school chief problem		x
Female (N=569)	#54 Considers parents more strict	x	
	#69 Considers school chief problem		x
	#70 Discusses problems less	x	

QUESTION #54. How strict are your parents? (1) Very strict (2) Fairly strict (3) Not very strict (4) Not strict at all

The question of parental strictness is reported in Table 56. Female low achievers consider their parents more strict than do female high achievers. Among the males, there is no difference.

TABLE 56

ANALYSIS OF QUESTIONNAIRE DATA:
STRICTNESS OF PARENTS

Sex	Comparison	Low Achievers	Average Achievers	High Achievers	X^2	p
Male	Very, Fairly strict	245	163	147	3.1	N.S.
	Not very, Not at all	91	76	75		
Female	Very, Fairly strict	156	158	170	8.3	.02
	Not very, Not at all	54	77	105		

For those students who consider their parents *very strict* or *fairly strict* (response #1 or #2), the following related items were found to be significant:

Response to #54: #1 or #2

Sex	Significant Cross-Items	.05	.01
Male (N=555)	#61 Has fewer problems making friends	x	
	#62 Dates more	x	
	#66 Is more likely to smoke		x
	#69 Considers school chief problem		x
Female (N=479)	#61 Has fewer problems making friends	x	
	#62 Dates more		x
	#63 Has more problems with siblings	x	
	#66 Is more likely to smoke		x
	#69 Considers school chief problem		x

For those students who consider their parents not very strict or not strict at all (responses #3 or #4), the following related items were found to be significant:

Response to #54: #3 or #4

Sex	Significant Cross-Items	.05	.01
Male (N=242)	#56 Feels parents encourage and help	x	
	#59 Goes out more evenings		x
	#61 Has fewer problems making friends		x
	#62 Dates more		x
	#65 Has more health complaints	x	
	#66 Is more likely to smoke		x
	#69 Considers school chief problem	x	
Female (N=236)	#58 Feels superior at making friends	x	
	#62 Dates more		x
	#66 Is more likely to smoke		x
	#69 Considers school chief problem	x	
	#70 Discusses problems less		x

QUESTION #55. What causes arguments between you and your parents?

Question 55 asked about the kinds of arguments that occur between the student and his parents. Responses were grouped into categories of greatest frequency: school, brothers and sisters, behavior, activities, duties and chores, general differences of opinion, and none. The responses are analyzed in Table 57.

TABLE 57

ANALYSIS OF QUESTIONNAIRE DATA: CAUSE OF ARGUMENTS

Sex	Comparison	Low Achievers	Average Achievers	High Achievers	χ^2	p
Male	School Other	38 297	13 227	8 216	13.5	.01
Female	School Other	20 191	13 217	6 271	12.6	.01
Male	Brothers & Sisters Other	12 325	15 225	12 212	2.2	N.S.
Female	Brothers & Sisters Other	8 203	16 214	22 255	3.5	N.S.
Male	Behavior Other	34 303	19 221	16 208	1.5	N.S.
Female	Behavior Other	27 184	29 201	28 249	1.0	N.S.
Male	Activities Other	58 279	37 203	34 190	.3	N.S.
Female	Activities Other	48 163	48 182	50 227	1.6	N.S.
Male	Duties & Chores Other	18 319	23 217	19 205	3.9	N.S.
Female	Duties & Chores Other	9 202	11 219	16 261	.5	N.S.
Male	General Differences Other	64 273	49 191	56 168	2.9	N.S.
Female	General Differences Other	28 182	42 188	53 224	3.1	N.S.
Male	None Other	38 299	29 211	41 183	6.1	.05
Female	None Other	27 184	22 208	52 225	9.0	.02

Two conclusions may be drawn from this question: First, among both male and female low achievers, school more frequently becomes the subject of argument with the parents. Second, both male and female high achievers more frequently report that they do not have arguments with their parents.

For those students who report general differences of opinion as the cause of arguments, the following related items were found to be significant:

Response to #55: General

Sex	Significant Cross-Items	.05	.01
Male (N=169)	#59 Goes out more evenings	x	
	#66 Is more likely to smoke		x
	#72 Is less satisfied with self	x	
Female (N=123)	None		

For those students who report that they do not argue, the following related items were found to be significant:

Response to #55: Nothing

Sex	Significant Cross-Items	.05	.01
Male (N=108)	#66 Is more likely to smoke	x	
Female (N=101)	#62 Dates more	x	
	#66 Is more likely to smoke	x	

QUESTION #56. As far as school is concerned, do your parents usually; (1) Praise you (2) Encourage you (3) Help you (4) Scold you (5) Punish you (6) Pay little attention (7) Expect more than you can do (8) Not know how you are doing (9) Talk with teachers or counselor. Explain what they do.

This question sought to elicit the kinds of feelings the parents express toward the child's school progress. That is, do they tend to praise the child, encourage, help, scold, punish?

Table 58 shows relations between the kind of parental reaction and the child's pattern of scholastic achievement. High achievers experience significantly more praise or a combination of praise and encouragement from their parents than do the low achievers. Male low achievers more often report that parents offer help or resort to scolding and punishment. Female low achievers are more likely to report that parents expect more than they can do.

Grouping the responses to this same question into the categories of helping responses and critical responses produced another basis for comparison. A distinct pattern is evident: significantly more high achievers feel a helping parental reaction, while significantly more low achievers feel a critical parental reaction (see Table 59).

TABLE 58

ANALYSIS OF QUESTIONNAIRE DATA: PARENTAL REACTION TO SCHOOL PROGRESS - A

Sex	Comparison	Low Achievers	Average Achievers	High Achievers	χ^2	p
Male	Praise you	3	4	17	22.7	.001
	Other	334	236	207		
Female	Praise you	0	4	15	14.6	.001
	Other	211	226	262		
Male	Encourage you	122	106	85	3.8	N.S.
	Other	215	134	139		
Female	Encourage you	61	71	80	.1	N.S.
	Other	150	159	197		
Male	Praise & Encourage	4	7	35	57.1	.001
	Other	333	233	189		
Female	Praise & Encourage	4	10	34	15.9	.001
	Other	207	220	243		
Male	Help you	18	10	2	7.6	.05
	Other	319	230	222		
Female	Help you	13	11	11	1.1	N.S.
	Other	198	219	266		
Male	Scold and/or punish	24	9	1	14.9	.001
	Other	313	231	223		
Female	Scold and/or punish	7	7	2	4.6	N.S.
	Other	204	223	275		
Male	Pay little attention	7	11	6	3.0	N.S.
	Other	330	229	218		
Female	Pay little attention	8	19	14	4.3	N.S.
	Other	203	211	263		
Male	Expect more	13	11	9	.1	N.S.
	Other	324	229	215		
Female	Expect more	14	19	6	9.9	.01
	Other	197	211	271		

TABLE 59

ANALYSIS OF QUESTIONNAIRE DATA: PARENTAL REACTION TO SCHOOL PROGRESS - B

Sex	Comparison	Low Achievers	Average Achievers	High Achievers	χ^2	p
Male	Helping Responses	72	46	75	15.1	.001
	Other	265	194	149		
Female	Helping Responses	47	68	106	14.4	.001
	Other	164	162	171		
Male	Critical Responses	53	32	12	13.9	.001
	Other	284	208	212		
Female	Critical Responses	31	29	9	21.3	.001
	Other	180	201	268		

For those students who report that the parents encourage (response #2), the following related items were found to be significant:

Response to #56: #2

Sex	Significant Cross-Items	.05	.01
Male (N=313)	#59 Goes out more evenings		x
	#62 Dates more	x	
Female (N=212)	#62 Dates more	x	

For those students who report that parents do other than encourage, the following related items were found to be significant:

Response to #56: Other than #2

Sex	Significant Cross-Items	.05	.01
Male (N=488)	#59 Goes out more evenings	x	
	#62 Dates more		x
Female (N=506)	#62 Dates more		x

QUESTION #57. Have your parents ever visited this school? (1) Yes (2) No
Explain why.

About equal proportions of parents of all groups have visited the school, but the reasons for the visit differ. Significantly more parents of high achievers have come to the school for activities, whereas more parents of low achievers have come because of the child's poor marks or misbehavior (see Table 60).

TABLE 60

ANALYSIS OF QUESTIONNAIRE DATA:
HAVE PARENTS VISITED THIS SCHOOL?

Sex	Comparison	Low Achievers	Average Achievers	High Achievers	x^2	p
Male	Yes No	225 112	168 71	155 66	1.0	N.S.
Female	Yes No	136 75	158 71	196 77	2.9	N.S.
Male	For activities Other	39 298	53 187	75 149	39.3	.001
Female	For activities Other	31 180	53 177	81 196	14.3	.001
Male	Marks & Behavior Other	85 252	35 205	12 212	39.5	.001
Female	Marks & Behavior Other	40 171	28 202	27 250	9.1	.02

For those students who report that the parents have visited the school, the following related items were found to be significant:

Response to #57: Yes

Sex	Significant Cross-Items	.05	.01
Male (N=548)	#59 Goes out more evenings	x	
	#62 Dates more		x
	#66 Is more likely to smoke		x
Female (N=490)	#62 Dates more		x
	#66 Is more likely to smoke		x

For those students who report that the parents have not visited the school, the following related items were found to be significant:

Response to #57: No

Sex	Significant Cross-Items	.05	.01
Male (N=249)	#59 Goes out more evenings		x
	#62 Dates more	x	
	#66 Is more likely to smoke		x
Female (N=223)	#62 Dates more		x
	#66 Is more likely to smoke	x	

QUESTION #58. I make friends and get along with people: (1) Better than others do (2) About as well as others do (3) Not as well as others do

The subject of making friends and getting along with people was pursued in this question. Comparison of the extreme responses: #1 Better than others do, and #3 Not as well as others do reveals the differences (see Table 61).

TABLE 61

ANALYSIS OF QUESTIONNAIRE DATA: MAKING FRIENDS

Sex	Comparison	Low Achievers	Average Achievers	High Achievers	X^2	p
Male	Better Than Others Not as Well as Others	69 18	48 22	43 25	5.0	N.S.
Female	Better Than Others Not as Well as Others	64 9	46 19	63 16	6.0	.05

There is a difference approaching significance (p .10) among the males. Low achievers consider themselves better at making friends. Among the female low achievers, this same feeling is manifest and becomes significant at the .05 level.

For those students who report that they make friends and get along with people better than others (response #1), the following related items were found to be significant:

Response to #58: #1

Sex	Significant Cross-Items	.05	.01
Male (N=160)	#66 Is more likely to smoke #72 Is less satisfied with self	x x	
Female (N=173)	#62 Dates more #66 Is more likely to smoke #69 Considers school chief problem	 x	x x

For those students who report that they make friends and get along with people about as well as others or not as well as others (responses #2 or #3), the following related items were found to be significant:

Response to #58: #2 or #3

Sex	Significant Cross-Items	.05	.01
Male (N=636)	#59 Goes out more evenings		x
	#61 Has fewer problems making friends		x
	#62 Dates more		x
	#66 Is more likely to smoke		x
	#69 Considers school chief problem		x
Female (N=538)	#62 Dates more		x
	#63 Has more problems with siblings	x	
	#66 Is more likely to smoke		x
	#69 Considers school chief problem		x
	#70 Discusses problems less	x	

QUESTION #59. On the average, how many nights a week do you go out?

Responses to this question were grouped into two categories: 1 or 2 nights and 3 - 7 nights. The results indicate that male low achievers go out evenings significantly more often (see Table 62).

TABLE 62

ANALYSIS OF QUESTIONNAIRE DATA:
NUMBER OF EVENINGS OUT

Sex	Comparison	Low Achievers	Average Achievers	High Achievers	X^2	p
Male	1-2 Evenings 3-7 Evenings	162 120	138 67	137 41	16.2	.001
Female	1-2 Evenings 3-7 Evenings	137 59	139 62	185 55	4.1	N.S.

For those students who report that they go out 1 or 2 nights, the following related items were found to be significant:

Response to #59: 1 or 2

Sex	Significant Cross-Items	.05	.01
Male (N=437)	#61 Has fewer problems making friends		x
	#62 Dates more	x	
	#66 Is more likely to smoke		x
	#69 Considers school chief problem		x
	#72 Is less satisfied with self	x	
Female (N=461)	#62 Dates more		x
	#66 Is more likely to smoke		x
	#69 Considers school chief problem		x

For those students who report that they go out 3-7 nights, the following related items were found to be significant:

Response to #59: 3 - 7

Sex	Significant Cross-Items	.05	.01
Male (N=228)	#61 Has fewer problems making friends	x	
	#66 Is more likely to smoke	x	
Female (N=176)	#62 Dates more	x	
	#66 Is more likely to smoke	x	
	#69 Considers school chief problem	x	

QUESTION #60. Do your parents allow your friends to visit in your home?
(1) Yes (2) No

This question was unusable since virtually all of the students in this population answered in the affirmative.

QUESTION #61. Is there anything that has been a worry to you as far as making friends is concerned?

The yes and no responses to this question are compared in Table 63.

TABLE 63

ANALYSIS OF QUESTIONNAIRE DATA:
PROBLEM MAKING FRIENDS

Sex	Comparison	Low Achievers	Average Achievers	High Achievers	X^2	p
Male	Yes No	79 258	83 157	88 136	17.5	.001
Female	Yes No	84 127	112 118	134 143	4.5	N.S.

It is the high-achieving male who reports significantly more problems in making friends.

For those students who report that they do have worries about making friends, the following related items were found to be significant:

Response to #61: Yes

Sex	Significant Cross-Items	.05	.01
Male (N=208)	#74 Has fewer than two siblings		x
Female (N=291)	#62 Dates more		x
	#72 Is less satisfied with self	x	
	#74 Has fewer than two siblings		x

For those students who report that they do not have worries about making friends, the following related items were found to be significant:

Response to #61: No

Sex	Significant Cross-Items	.05	.01
Male (N=551)	#62 Dates more		x
	#74 Has more than two siblings		x
Female (N=388)	#62 Dates more		x
	#74 Has more than two siblings		x

QUESTION #62. Which of the following applies to you? (1) I don't date (2) I date occasionally (3) I date regularly (4) I go steady

The responses here were grouped into two categories: #1 and #2 was compared to #3 and #4 (see Table 64).

TABLE 64

ANALYSIS OF QUESTIONNAIRE DATA:
DATING

Sex	Comparison	Low Achievers	Average Achievers	High Achievers	X^2	p
Male	Don't or Occasionally	282	216	211		
	Regularly or Go Steady	52	22	11	16.5	.001
Female	Don't or Occasionally	120	173	223		
	Regularly or Go Steady	90	55	51	36.8	.001

Highly significant differences appear. Both male and female low achievers are much more likely to date regularly or go steady.

For those students who report that they do not date or date occasionally (responses #1 or #2), the following related items were found to be significant:

Response to #62: #1 or #2

Sex	Significant Cross-Items	.05	.01
Male (N=709)	#64 Has more health problems	x	
	#66 Is more likely to smoke		x
	#69 Considers school chief problem		x
	#72 Is less satisfied with self	x	
Female (N=516)	#63 Has more problems with siblings	x	
	#66 Is more likely to smoke		x
	#68 Is less satisfied with physical self	x	
	#69 Considers school chief problem		x

For those students who report that they date regularly or go steady (responses #3 or #4), the following related items were found to be significant:

Response to #62: #3 or #4

Sex	Significant Cross-Items	.05	.01
Male (N=85)	None		
Female (N=196)	#66 Is more likely to smoke #69 Considers school chief problem	x	 x

QUESTION #63. Are any of your brothers or sisters a problem to you? (1) Yes (2) No. In what way?

This question was directed at the problem of conflict among siblings. The responses indicate that female low achievers have significantly more difficulties with their brothers and sisters than do high achievers (see Table 65).

TABLE 65

ANALYSIS OF QUESTIONNAIRE DATA:
ARE SIBLINGS A PROBLEM?

Sex	Comparison	Low Achievers	Average Achievers	High Achievers	x^2	p
Male	Yes No	102 209	84 142	74 134	1.1	N.S.
Female	Yes No	81 110	91 121	76 167	8.3	.02

(This question was not compared to related items.)

QUESTION #64. Do you have any physical disabilities or health problems?
(1) Yes (2) No. Describe.

The question of physical disability or a health problem did not disclose any distinquishable difference among the groups of low, average, or high achievers (see Table 66).

TABLE 66

ANALYSIS OF QUESTIONNAIRE DATA:
PHYSICAL DISABILITIES OR HEALTH PROBLEMS

Sex	Comparison	Low Achievers	Average Achievers	High Achievers	X^2	p
Male	Yes No	86 251	46 194	48 176	3.3	N.S.
Female	Yes No	56 155	55 175	61 216	1.3	N.S.

For those students who report that they do not have any health problems, the following related items were found to be significant:

Response to #64: No

Sex	Significant Cross-Items	.05	.01
Male (N=621)	#66 Is more likely to smoke #72 Is less satisfied with self	 x	x
Female (N=546)	#66 Is more likely to smoke		x

For those students who report that they do have health problems, the following related items were found to be significant:

Response to #64: Yes

Sex	Significant Cross-Items	.05	.01
Male (N=180)	#66 Is more likely to smoke		x
Female (N=172)	None		

QUESTION #65. Are you subject to: (1) Headaches (2) Toothaches (3) Stomach trouble (4) Nervousness (5) Sleeplessness (6) Eye trouble (7) Hearing loss (8) Under or over weight (9) Other (describe)

Specific minor health complaints were also studied. The largest number of responses fell into none. The complaints which received the most response were under or over weight, nervousness, or a combination of 3 or 4 of these symptoms. These responses, analyzed in Table 67, reveal no differences in the groups in terms of these factors.

TABLE 67

ANALYSIS OF QUESTIONNAIRE DATA:
HEALTH COMPLAINTS

Sex	Comparison	Low Achievers	Average Achievers	High Achievers	X^2	p
Male	None Some Complaint	116 221	94 146	97 127	4.4	N.S.
Female	None Some Complaint	50 161	64 166	75 202	1.0	N.S.
Male	Under/over Weight Other	33 304	35 205	28 196	3.0	N.S.
Female	Under/over Weight Other	26 185	29 201	31 246	.2	N.S.
Male	Nervousness Other	23 314	13 227	18 206	1.1	N.S.
Female	Nervousness Other	17 194	18 212	36 241	4.9	N.S.
Male	3-4 Complaints Other	27 310	13 227	15 209	1.3	N.S.
Female	3-4 Complaints Other	34 177	24 206	28 249	4.8	N.S.

For those students who report that they are subject to none of these symptoms, the following related items were found to be significant:

Response to #65: None

Sex	Significant Cross-Items	.05	.01
Male (N=307)	#66 Is more likely to smoke #72 Is less satisfied with self		x x
Female (N=189)	#66 Is more likely to smoke		x

For those students who report that they are subject to some of these symptoms, the following related items were found to be significant:

Response to #65: Some Symptoms

Sex	Significant Cross-Items	.05	.01
Male (N=494)	#66 Is more likely to smoke		x
Female (N=529)	#66 Is more likely to smoke		x

QUESTION #66. Do you smoke? (1) Yes (2) No

Smoking turned out to be a highly significant variable (see Table 68). Male and female low achievers are much more likely to smoke than are high achievers.

TABLE 68

ANALYSIS OF QUESTIONNAIRE DATA: DO YOU SMOKE?

Sex	Comparison	Low Achievers	Average Achievers	High Achievers	x^2	p
Male	Yes No	95 238	49 184	21 201	29.4	.001
Female	Yes No	54 154	36 189	19 257	33.0	.001

For those students who report that they do smoke, the following related items were found to be significant:

Response to #66: Yes

Sex	Significant Cross-Items	.05	.01
Male (N=165)	#71 Wouldn't discuss severe problems	x	
Female (N=109)	None		

For those students who report that they do not smoke, the following related items were found to be significant:

Response to #66: No

Sex	Significant Cross-Items	.05	.01
Male (N=623)	#69 Considers school chief problem #72 Is less satisfied with self	 x	x
Female (N=600)	#69 Considers school chief problem #70 Discusses problems less	 x	x

QUESTION #67. Are you doing anything to improve your health? Describe.

In this, as in most of the questions relating to health, no pattern was discernible (see Table 69). Most of the yes responses were proper diet, rest, and exercise.

TABLE 69

ANALYSIS OF QUESTIONNAIRE DATA:
DOING ANYTHING TO IMPROVE HEALTH?

Sex	Comparison	Low Achievers	Average Achievers	High Achievers	X^2	p
Male	Yes No	236 68	168 46	164 39	.7	N.S.
Female	Yes No	122 51	140 54	174 53	2.0	N.S.

(This question was not compared to related items.)

QUESTION #68. Are you generally satisfied or dissatisfied with your height, weight, and physique? (1) Very satisfied (2) Fairly satisfied (3) Not very satisfied (4) Very dissatisfied. For what reason?

The student's feelings about his physical self was the subject of this question. An analysis of the responses did not disclose significant differences among the groups (see Table 70).

TABLE 70

ANALYSIS OF QUESTIONNAIRE DATA:
FEELINGS ABOUT PHYSICAL SELF

Sex	Comparison	Low Achievers	Average Achievers	High Achievers	χ^2	p
Male	Very Satisfied Other	56 281	39 201	28 196	1.8	N.S.
Female	Very Satisfied Other	28 183	23 207	31 246	1.1	N.S.
Male	Fairly Satisfied Other	207 130	153 87	155 69	3.5	N.S.
Female	Fairly Satisfied Other	128 83	157 73	196 81	5.6	N.S.
Male	Not Very Satisfied Other	48 289	39 201	31 193	.5	N.S.
Female	Not Very Satisfied Other	41 170	35 195	34 243	4.6	N.S.
Male	Very Dissatisfied Other	24 313	8 232	10 214	4.3	N.S.
Female	Very Dissatisfied Other	14 197	15 215	14 263	.6	N.S.

(This question was not compared to related items.)

QUESTION #69. What would you consider your chief problem at present?

The most frequent responses to this question were school, self improvement (such things as behavior, appearance, self-confidence, managing time and money, making friends, etc.), and none. These responses are compared in Table 71.

To a highly significant degree, school is reported as chief problem by more low achievers.

TABLE 71

ANALYSIS OF QUESTIONNAIRE DATA: CHIEF PROBLEM

Sex	Comparison	Low Achievers	Average Achievers	High Achievers	X^2	p
Male	School Other	189 148	111 129	75 149	27.4	.001
Female	School Other	93 118	76 154	73 204	16.8	.001
Male	Self Improvement Other	42 295	22 218	34 190	3.8	N.S.
Female	Self Improvement Other	32 179	38 192	50 227	.6	N.S.
Male	None Other	21 316	24 216	23 201	3.7	N.S.
Female	None Other	13 198	20 210	29 248	2.8	N.S.

For those students who report that school is their chief problem, the following related items were found to be significant:

Response to #69: School

Sex	Significant Cross-Items	.05	.01
Male (N=375)	#72 Is less satisfied with self		x
Female (N=242)	None		

For those students who report something other than school as chief problem, no related items were found to be significant.

QUESTION #70. With whom do you sometimes discuss your problems? (1) No one (2) Mother (3) Father (4) Relative (5) Friend of same sex (6) Friend of opposite sex (7) Teacher (8) Counselor (9) Other (specify)

The responses to this question disclose differences in the persons that male and female students choose to discuss their problems with. Males more often talk to mother and father. Females seldom talk to father; they are closer to mother and friend of same sex. This difference is shown in Table 72.

TABLE 72

ANALYSIS OF QUESTIONNAIRE DATA:
SEX DIFFERENCES IN DISCUSSION OF PROBLEMS

Sex	No One	Mother	Father	Friend	X^2	p
Male	110	76	51	106		
Female	43	84	6	100	45.9	.001

For this reason, male and female responses will be shown in separate tables. The male response is shown in Table 73. No difference appears among males in regard to discussion of problems.

TABLE 73

ANALYSIS OF QUESTIONNAIRE DATA:
WITH WHOM DO YOU DISCUSS PROBLEMS? (MALE)

Comparison	Low Achievers	Average Achievers	High Achievers	X^2	p
Mother Only Other	33 304	20 220	23 201	.4	N.S.
Father Only Other	20 317	15 225	16 208	.3	N.S.
Mother and/or Father Other	92 245	69 171	68 155	.7	N.S.
Friend Same Sex Other	43 294	36 204	27 197	.8	N.S.
No One Other	57 280	30 210	23 201	5.4	N.S.

The data for females in response to question #70 appear in Table 74. More female high achievers report that they discuss problems with mother or mother and friend of same sex. Apparently low-achieving females are somewhat less given to discussing their personal problems.

TABLE 74

ANALYSIS OF QUESTIONNAIRE DATA:
WITH WHOM DO YOU DISCUSS PROBLEMS? (FEMALE)

Comparison	Low Achievers	Average Achievers	High Achievers	χ^2	p
Mother Other	18 193	23 207	43 234	6.4	.05
Friend Same Sex Other	29 182	30 200	41 236	.2	N.S.
Mother and/or Friend Other	80 131	92 137	141 136	9.8	.01
No One Other	12 199	15 215	16 261	.1	N.S.

QUESTION #71. If you had a severe problem, to whom would you go for help in solving it?

The responses to this question clustered in the category parents. It appears that about equal proportion of each group would look to parents for help in the event of a severe problem (see Table 75).

TABLE 75

ANALYSIS OF QUESTIONNAIRE DATA:
TO WHOM WOULD YOU GO WITH SEVERE PROBLEM?

Sex	Comparison	Low Achievers	Average Achievers	High Achievers	χ^2	p
Male	Parents Other	206 131	156 84	133 90	1.5	N.S.
Female	Parents Other	97 114	115 115	156 121	5.3	N.S.

QUESTION #72. All things considered, how do you feel about yourself as a person? (1) Very satisfied (2) Fairly satisfied (3) Not very satisfied (4) Very dissatisfied. Please explain why you feel this way.

This item was aimed at learning something about the student's self feelings. There are several ways of analyzing the student responses. First of all, the responses of males and females were compared, without regard to the achievement groupings. This is shown in Table 76.

TABLE 76

ANALYSIS OF QUESTIONNAIRE DATA:
COMPARISON OF MALE AND FEMALE SELF FEELINGS

Sex	Very Satisfied	Fairly Satisfied	Not Very Satisfied	Very Dis-Satisfied	X^2	p
Male	140	531	106	15		
Female	74	497	116	24	19.5	.001

Significant differences appear in the male and female reaction to this question. This is principally due to a higher proportion of males who check very satisfied.

A comparison of the responses of male and female low achievers appears in Table 77.

TABLE 77

ANALYSIS OF QUESTIONNAIRE DATA:
COMPARISON OF SELF FEELINGS OF LOW-ACHIEVING STUDENTS

Sex	Very Satisfied	Fairly Satisfied	Not Very Satisfied	Very Dis-Satisfied	X^2	p
Male	46	225	56	7		
Female	20	140	39	9	4.3	N.S.

No significant differences are evident here, but these results, compared to those of Table 76, suggest that low-achieving males may have a lower self regard than the general population.

Male and female high achievers are compared in Table 78.

TABLE 78

ANALYSIS OF QUESTIONNAIRE DATA: COMPARISON OF SELF FEELINGS OF HIGH-ACHIEVING STUDENTS

Sex	Very Satisfied	Fairly Satisfied	Not Very Satisfied	Very Dis-Satisfied	X^2	p
Male	56	140	25	2		
Female	30	198	40	6	18.2	.001

These results indicate that the high-achieving male has more positive self feelings than the high-achieving female. Compared to the results of Table 77, it suggests that the male high achiever also has more positive self feelings than the male low achiever. This is borne out in Table 79, which compares male and female high, average, and low achievers.

TABLE 79

ANALYSIS OF QUESTIONNAIRE DATA: HOW DO YOU FEEL ABOUT YOURSELF AS A PERSON?

Sex	Comparison	Low Achievers	Average Achievers	High Achievers	X^2	p
Male	Very Satisfied	46	38	56		
	Fairly Satisfied	225	166	140		
	Not Very Satisfied	56	25	25		
	Very Dissatisfied	7	6	2	17.8	.01
Female	Very Satisfied	20	24	30		
	Fairly Satisfied	140	159	198		
	Not Very Satisfied	39	37	40		
	Very Dissatisfied	9	9	6	3.7	N.S.

These results indicate that there are differences in the self regard of the various achievement groups. A significantly greater number of male high achievers feel very satisfied with themselves. No differences were observed in the female population.

QUESTION #73. In the following space write anything you care to say or anything that you feel would be helpful in understanding you as a person:

This final item was useful for obtaining data to include in the Student Information Form which was given to teachers of the experimental group. For analysis here, the only comparison was a simple tally of those who wrote something and those who did not (see Table 80).

TABLE 80

ANALYSIS OF QUESTIONNAIRE DATA:
WRITE ABOUT SELF

Sex	Comparison	Low Achievers	Average Achievers	High Achievers	X^2	p
Male	Wrote Did Not	180 157	123 117	133 91	3.2	N.S.
Female	Wrote Did Not	140 69	136 94	166 111	3.3	N.S.

No differences were apparent.

II. ANALYSIS OF SELF CONCEPT DATA

The data on self concept was obtained from the Bills Index of Adjustment and Values.[1] This instrument consists of 37 trait words on which the student rates himself in several ways on a 1-5 scale. Scores are obtained for self concept, self attitude, self ideal, and for the discrepancy between self concept and self ideal.

A. Response to Trait Words

The first analysis of these data was a comparison of the responses of low and high achievers to each trait word. For this purpose, a tally was made of the frequency of responses to each word in each column. This involved a simple count of the 1's, 2's, 3's, 4's, or 5's marked by high-achieving and low-achieving students in response to the various words, and a statistical comparison of the two.

The tallies were arranged into cells like the following:

WORD: "ACTIVE"

	1	2	3	4	5	Total
High Achievers						
Low Achievers						
Total						

Then, the two distributions were compared by means of the chi-square statistic.

The results of these comparisons appear in Tables A1 through A12 in Appendix VI. Twenty-one of the 37 trait words evoked significantly different responses from high and low achievers in one or another of the rating columns.

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[1] A copy of this instrument is contained in the Appendix. Information about construction, validity, scoring, etc., appears in Chapter III.

These were the following: active, alert, cheerful, cooperative, courteous, dependable, faithful, friendly, generous, helpful, honest, intelligent, loyal, neat, obedient, patient, polite, quiet, studious, truthful, understanding.

Sixteen of the trait words did not elicit different responses by high and low achievers: carefree, considerate, democratic, happy, humorous, interesting, kind, playful, sharing, sincere, sociable, tactful, thoughtful, thrifty, trustworthy, unselfish.

A significant result in the chi-square test indicates that the responses of the two groups, high and low achievers, are independent of each other. There is a difference in the fit of the two distributions.

> In every case, this difference was the result of the tendency of the high achiever to select higher scale numbers, indicating a more positive regard for self and others and a higher level of self aspiration, and by a converse tendency of the low achiever to select lower scale numbers, indicating a less positive regard for self and others and a lower level of aspiration.

Here is a summation of the trait words which evoked a significantly different response by high- and low-achieving students in each of the classifications:

Self Concept (Column I)

Male: INTELLIGENT, STUDIOUS

Female: ACTIVE, ALERT, DEPENDABLE, HELPFUL, NEAT, OBEDIENT, PATIENT, QUIET, STUDIOUS

Self Attitude (Column II)

Male: ALERT, CHEERFUL, HONEST, LOYAL, STUDIOUS, TRUTHFUL

Female: ALERT, HELPFUL, INTELLIGENT, NEAT, STUDIOUS

Self Ideal (Column III)

Male: COOPERATIVE, COURTEOUS, FRIENDLY, HONEST, OBEDIENT, TRUTHFUL, UNDERSTANDING

Female: OBEDIENT

Peer Self Concept (Column I - "Others")

Male: ACTIVE, FAITHFUL, QUIET

Female: COOPERATIVE

Peer Self Attitude (Column II - "Others")

Male: GENEROUS, QUIET

Female: FAITHFUL

Peer Self Ideal (Column III - "Others")

Male: (None)

Female: DEPENDABLE, FRIENDLY, POLITE

Thus it seems that high and low achievers have different attitudes and traits. In general, achievers have a greater investment in acquiring and maintaining a high degree of socially desirable characteristics.

B. High and Low Achievers Compared

The Bills IAV is scored by adding the ratings the student gives himself on each word and obtaining a total score. The total for Column I (how you are) is a measure of self concept; Column II (how you feel about yourself) is self attitude; Column III (how you would like to be) is self ideal. The difference between Columns I and III provides a D-score, a measure of discrepancy between self concept and self ideal.

The mean scores for high and low achievers are reported in Table 81. The scores for the high achievers are higher in every case, indicating a more positive self regard. However, not all these differences are statistically significant. The following significant differences appeared: Male high achievers have a higher self ideal score. Female high achievers have a higher self concept and self attitude and a lower discrepancy between real and ideal self.

TABLE 81

A COMPARISON OF SCORES ON THE BILLS INDEX OF ADJUSTMENT AND VALUES BETWEEN HIGH- AND LOW-ACHIEVING GROUPS

MALE								
	Category	Low Achievers			High Achievers			t
		No.	Mean	S.D.	No.	Mean	S.D.	
"SELF"	Self Concept	293	136.3	15.7	27	139.7	11.9	1.1
	Self Attitude		134.9	19.0		141.8	15.7	1.8
	Self Ideal		160.4	13.6		166.2	10.2	2.2*
	D-score		30.2	11.4		30.1	12.8	.04
"OTHERS"	Self Concept		134.7	18.2		137.1	16.7	.6
	Self Attitude		137.8	16.6		139.7	14.7	.5
	Self Ideal		154.0	15.7		156.0	17.5	.6
	D-score		24.6	14.1		22.7	14.4	.6

* - Significant at .05 level.

FEMALE								
	Category	Low Achievers			High Achievers			t
		No.	Mean	S.D.	No.	Mean	S.D.	
"SELF"	Self Concept	180	139.2	14.7	55	145.0	12.9	2.6**
	Self Attitude		134.1	19.0		141.8	17.0	2.7**
	Self Ideal		165.2	11.4		166.5	10.1	.7
	D-score		31.1	12.8		25.8	9.0	2.9**
"OTHERS"	Self Concept		138.2	16.1		139.6	18.1	.5
	Self Attitude		137.7	17.0		140.9	15.0	1.3
	Self Ideal		158.6	14.3		160.7	13.9	1.0
	D-score		24.4	11.1		24.2	9.9	.1

** - Significant at .01 level.

C. Pre- and Post-Scores for Low Achievers

The Bills IAV was administered to the high-potential, low-achieving students in the tenth grade and again in the twelfth grade to assess the effects of this experiment in terms of self concept. It was hypothesized that the experimental group would show gains over the controls as a result of the procedures of this study.

The pre- and post-scores for the three groups of low achievers are presented in Tables 82 and 83. There is some variation in the scores of the various groups, but no consistent pattern appears. The experimental group did not exceed the controls.

III. ANALYSIS OF ACHIEVEMENT DATA

The instrument used to measure achievement was the Sequential Test of Educational Progress (STEP) which, together with the School and College Ability Test (SCAT), is administered to all Detroit high school students in the tenth grade and in the twelfth grade. This test series became a source of pre- and post-experiment data.

A. STEP-SCAT Mean Scores of High-Potential Low-Achievers

The students who were selected for this experiment were designated as high-potential on the basis of a converted score of 290 or above on SCAT, which marked the 75th percentile. The complete set of STEP-SCAT scores for these students, entered on punched cards, was obtained from the Department of Instructional Research, and statistical data were computed.

The mean tenth grade scores on each section of STEP and SCAT for the entire population of 585 high-potential, low-achieving students is given in Table 84, together with the percentile rank of those scores as

TABLE 82

PRE-TEST SCORES FOR THREE GROUPS OF HIGH-POTENTIAL LOW-ACHIEVERS ON BILLS IAV

"SELF"

MALE	Self Concept			Self Attitude			Self Ideal			D-Score		
	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.
GROUP I	114	138.2	14.2	114	138.6	17.9	114	160.3	14.2	114	28.7	10.2
GROUP II	56	134.9	15.2	56	132.2	20.3	56	160.5	11.4	56	31.4	12.3
GROUP III	123	135.2	17.0	123	132.8	18.7	123	160.4	13.9	123	31.0	11.8

"OTHERS"

MALE	Self Concept			Self Attitude			Self Ideal			D-Score		
	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.
GROUP I	114	135.5	16.9	114	138.2	15.7	114	154.1	16.1	114	23.4	12.9
GROUP II	56	135.7	17.0	56	137.5	16.8	56	154.0	13.9	56	24.0	12.5
GROUP III	123	133.4	19.7	123	137.5	17.1	123	154.0	16.1	123	25.9	15.6

"SELF"

FEMALE	Self Concept			Self Attitude			Self Ideal			D-Score		
	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.
GROUP I	76	139.6	14.7	76	137.2	18.9	76	165.6	10.4	76	30.7	13.2
GROUP II	40	138.4	16.5	40	129.3	19.2	40	166.8	11.8	40	33.0	15.0
GROUP III	64	139.2	13.4	64	133.5	18.5	64	163.8	12.1	64	30.5	13.4

"OTHERS"

FEMALE	Self Concept			Self Attitude			Self Ideal			D-Score		
	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.
GROUP I	76	139.3	17.2	76	141.3	19.1	76	158.3	16.2	76	24.0	12.1
GROUP II	40	138.0	15.5	40	132.8	13.9	40	160.8	11.2	40	26.1	10.5
GROUP III	64	137.1	15.2	64	136.4	15.0	64	157.6	13.6	64	23.7	10.2

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TABLE 83

POST-TEST SCORES FOR THREE GROUPS OF HIGH-POTENTIAL LOW-ACHIEVERS ON BILLS IAV

"SELF"

MALE	Self Concept			Self Attitude			Self Ideal			D-Score		
	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.
GROUP I	77	139.1	14.0	77	135.4	19.7	77	160.9	12.1	77	26.4	12.0
GROUP II	41	136.4	13.9	41	128.5	20.3	41	158.4	11.6	41	28.9	13.6
GROUP III	99	138.5	14.7	99	135.2	19.5	99	159.3	15.5	99	29.1	12.4

"OTHERS"

MALE	Self Concept			Self Attitude			Self Ideal			D-Score		
	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.
GROUP I	77	131.6	13.9	77	132.3	17.1	77	151.4	13.5	77	22.9	11.8
GROUP II	41	132.2	16.3	41	128.8	17.0	41	146.7	21.4	41	22.1	14.1
GROUP III	99	135.0	16.6	99	135.5	15.9	99	152.7	17.3	99	23.7	14.2

"SELF"

FEMALE	Self Concept			Self Attitude			Self Ideal			D-Score		
	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.
GROUP I	56	142.3	12.4	56	137.6	17.2	56	162.9	14.3	56	27.2	10.8
GROUP II	28	138.5	17.2	28	129.2	20.1	28	160.8	11.4	28	28.8	15.1
GROUP III	48	141.6	13.9	48	133.4	18.6	48	167.0	9.6	48	27.7	10.8

"OTHERS"

FEMALE	Self Concept			Self Attitude			Self Ideal			D-Score		
	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.
GROUP I	56	138.3	16.4	56	138.7	16.5	56	158.0	13.7	56	23.5	13.4
GROUP II	28	127.5	21.0	28	126.4	18.9	28	149.7	18.1	28	27.1	18.1
GROUP III	48	137.5	18.5	48	136.7	18.2	48	159.9	16.4	48	24.3	15.5

reported in the STEP and SCAT manuals. The selected group of students rank in the upper quartile of the distribution both in aptitude (as measured by SCAT) and in achievement (as measured by STEP). Thus, although these students are termed low achievers in regard to grade point average, their standardized test scores are in the top 25 per cent.

TABLE 84

TENTH GRADE STEP-SCAT MEAN SCORES AND PERCENTILE RANKS FOR THE SELECTED HIGH-POTENTIAL, LOW-ACHIEVING STUDENTS

Test		No.	Mean	%ile Rank
STEP	Math	583	280.8	77
	Science	578	282.0	72
	Social Studies	578	281.8	78
	Reading	583	299.7	78
	Listening	290	294.3	75
	Writing	582	290.3	79
SCAT	Verbal	585	289.0	82
	Quantitative	585	305.5	82
	Total	585	296.0	87

The twelfth grade scores for this same group (less those lost through dropout and transfer) is reported in Table 85. These scores are at about the same percentile rank as the tenth grade scores. This indicates that learning and growth have taken place. The high-potential, low-achieving students still achieve in the upper 25 per cent of the distribution, even against the more selective, twelfth grade norms.

TABLE 85

TWELFTH GRADE STEP-SCAT MEAN SCORES AND PERCENTILE RANKS FOR THE SELECTED HIGH-POTENTIAL, LOW-ACHIEVING STUDENTS

Test		No.	Mean	%ile Rank
STEP	Math	434	288.7	79
	Science	435	290.0	76
	Social Studies	435	291.8	79
	Reading	436	308.2	78
	Listening	*		
	Writing	434	301.5	78
SCAT	Verbal	435	296.0	82
	Quantitative	435	309.7	81
	Total	435	301.8	83

*Listening test not administered in twelfth grade.

B. Comparison of Low, Average, and High Achievers

The high-potential, low-achieving students chosen for this experiment were designated as low-achieving on the basis of a grade point average of 2.0 or lower in the first semester of the tenth grade. Those high-potential students whose grade point was 2.1 - 2.9 were termed Average Achievers and those whose grade point was 3.0 or higher were termed High Achievers. These groups were used for comparison purposes.

The tenth grade STEP-SCAT scores for the Low Achievers, Average Achievers, and High Achievers are compared in Table 86. Both Average and High Achievers attain higher mean scores on every section of STEP and SCAT, and these differences are significant at the .001 level.

The twelfth grade STEP-SCAT scores for the Low, Average, and High Achievers are presented in Table 87. Here the same pattern prevails. It appears that the higher grade point average is earned by the more able students, as judged by aptitude and achievement scores.

TABLE 86

COMPARISON OF MEAN TENTH GRADE STEP-SCAT SCORES FOR LOW ACHIEVERS, AVERAGE ACHIEVERS, AND HIGH ACHIEVERS

Test	GROUP 1-3 Low Achievers			GROUP 4 Average Achievers			GROUP 5 High Achievers		
	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.
STEP									
Math	583	280.8	8.7	487	283.9*	9.5	512	286.4*	10.6
Science	578	282.0	10.4	487	284.4*	10.8	511	286.7*	11.5
Soc Study	578	281.8	8.9	485	286.2*	10.1	511	290.9*	10.6
Read	583	299.7	9.6	487	304.4*	9.4	512	308.6*	9.5
Listen	290	294.3	12.4	275	299.0*	14.0	245	301.8*	13.8
Write	582	290.3	11.3	484	297.0*	11.5	510	302.3*	11.9
SCAT									
Verbal	585	289.0	7.5	488	291.9*	8.6	512	295.3*	9.9
Quant	585	305.5	9.0	488	309.9*	9.0	512	314.2*	10.1
Total	585	296.0	5.3	488	299.3*	6.6	512	302.9*	7.8

*Difference from score of Low Achievers significant at .001 level.

TABLE 87

COMPARISON OF MEAN TWELFTH GRADE STEP-SCAT SCORES FOR LOW ACHIEVERS, AVERAGE ACHIEVERS, AND HIGH ACHIEVERS

Test	GROUP 1-3 Low Achievers			GROUP 4 Average Achievers			GROUP 5 High Achievers		
	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.
STEP									
Math	434	288.7	8.4	423	292.5*	9.0	472	296.3*	9.7
Science	435	290.0	10.3	426	292.5*	11.4	470	295.1*	11.4
Soc Study	435	291.8	9.5	425	295.6*	10.5	472	300.0*	10.1
Read	436	308.2	9.4	425	311.9*	9.3	472	314.6*	9.1
Listen	**								
Write	434	301.5	11.8	424	308.0*	12.2	472	314.1*	11.6
SCAT									
Verbal	435	296.0	7.3	423	299.4*	8.5	472	302.8*	8.3
Quant	435	309.7	10.6	423	314.9*	11.1	472	320.1*	10.7
Total	435	301.8	6.4	423	305.8*	7.8	472	310.0*	7.6

* Difference from score of Low Achievers significant at .001 level.
**Listening test not administered in twelfth grade.

C. Comparison of Pre- and Post-Scores

The high-potential, low-achieving students were randomly assigned to three groups: Experimental, Quasi-Control, and Control. This random assignment appears to have created three equated groups, for their STEP-SCAT scores are very similar (see Table 88). A statistical comparison of the three groups was performed by using the "t" technique to match Group 1 to 2, 1 to 3, and 2 to 3. Only one significant difference was noted: Group 2 students rank lower than Group 3 students on the STEP Math section.

TABLE 88

COMPARISON OF MEAN 10TH GRADE STEP-SCAT SCORES FOR THREE GROUPS OF HIGH-POTENTIAL, LOW-ACHIEVING STUDENTS

Test	GROUP 1 Experimental			GROUP 2 Quasi-Control			GROUP 3 Control		
	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.
Math	190	280.3	9.6	196	279.9	8.6	197	282.1*	7.7
Science	188	282.7	10.3	192	280.7	10.2	198	282.7	10.4
Soc Study	188	281.9	9.0	193	281.5	9.0	197	282.0	8.6
Read	189	299.7	9.8	196	300.0	9.3	198	299.2	9.6
Listen	97	293.5	10.4	96	295.5	14.3	97	293.8	12.1
Write	189	289.4	11.1	195	290.9	11.8	198	290.6	10.9
Verbal	191	289.0	7.9	196	288.6	7.2	198	289.3	7.5
Quant	191	305.0	8.9	196	305.0	9.2	198	306.5	8.9
Total	191	295.8	5.5	196	295.5	4.9	198	296.5	5.3

*Difference from Group 2 significant at .001 level.

The twelfth grade STEP-SCAT series was used as a post-test to evaluate the effects of this experiment in terms of achievement. It was hypothesized that the experimental group would exceed the controls in this measure. However, this hypothesis was not supported. The only significant difference is in the same general area of achievement: Group 2 ranks lower than Group 3 on the SCAT Quantitative section. The experimental group does not show any gain in achievement over the controls. It may be concluded that the procedures of this study did not affect the achievement of the experimental students, as measured by a standardized test.

TABLE 89

COMPARISON OF MEAN 12TH GRADE STEP-SCAT SCORES FOR THREE GROUPS OF HIGH-POTENTIAL, LOW-ACHIEVING STUDENTS

Test	GROUP 1 Experimental			GROUP 2 Quasi-Control			GROUP 3 Control		
	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.
Math	141	288.0	8.3	142	289.0	8.7	151	289.0	8.2
Science	142	291.2	10.5	142	289.1	10.0	151	289.7	10.3
Soc Study	141	290.7	10.1	142	292.3	8.9	152	292.5	9.5
Read	142	308.0	9.0	142	307.9	10.0	152	308.6	9.0
Listen	*								
Write	140	300.8	11.4	142	301.9	11.8	152	301.9	12.1
Verbal	141	295.8	7.7	142	295.7	7.1	152	296.5	7.2
Quant	141	309.3	10.5	142	308.2	11.4	152	311.4**	9.6
Total	141	301.5	6.6	142	301.2	6.5	152	302.7	6.0

* Listening test not administered in twelfth grade.
**Difference from Group 2 significant at .001 level.

IV. ANALYSIS OF GRADE POINT AVERAGE DATA

The marks for each of the high- and low-achieving students were collected from school records at the end of each half-year semester. This was begun in the tenth grade and carried through for three years to the end of the twelfth grade, six marking periods in all.

Only final marks in academic subjects were used. Grade point average was computed on the basis of A = 4, B = 3, C = 2, D = 1, E = 0. After the grade point average for each student was obtained, a mean for each group was computed. Separate means are reported for males and females.

A. Low Achievers

The mean grade point average for the three groups of male high-potential low-achievers is reported in Table 90. The female low achievers are given in Table 91.

Both male and female high-potential, low-achieving students begin the tenth grade by earning a grade point average of about 1.5, midway between a C and a D. This average increases slightly each semester. The male group ends the twelfth grade with 2.0, a C average. Females do somewhat better, earning 2.4, about midway between C and B.

There are no significant differences in the grade point averages of any of the three groups. They are, in fact, remarkably uniform. The procedures of this research did not produce any significant change in the grade point average of the experimental group.

The results were the same in each of the four schools.[1] No group differed significantly from any other group in any of the schools during any semester.

B. Average and High Achievers

The mean grade point averages for those designated Average Achievers (tenth grade GPA 2.1 - 2.9) and High Achievers (tenth grade GPA 3.0 or higher) appear in Table 92. Again, the results show great consistency semester after semester. Those who begin high school with a C average or a B average tend to maintain that same level of performance all through the high school years.

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[1] See Tables A13 through A20 in Appendix VII.

TABLE 90

COMBINED GRADE POINT AVERAGE OF HIGH-POTENTIAL, LOW-ACHIEVING GROUPS IN THE FOUR SCHOOLS

MALE

Grade	Group	No.	Mean	S.D.
10B	1. Experimental	115	1.4	.4
	2. Quasi-Control	113	1.4	.5
	3. Control	129	1.4	.4
	TOTAL	357	1.4	.4
10A	1. Experimental	114	1.7	.6
	2. Quasi-Control	109	1.6	.6
	3. Control	125	1.6	.6
	TOTAL	348	1.6	.6
11B	1. Experimental	98	1.7	.6
	2. Quasi-Control	98	1.6	.7
	3. Control	120	1.7	.7
	TOTAL	316	1.6	.6
11A	1. Experimental	89	1.7	.7
	2. Quasi-Control	92	1.7	.6
	3. Control	117	1.8	.7
	TOTAL	298	1.8	.7
12B	1. Experimental	83	1.8	.8
	2. Quasi-Control	88	1.8	.6
	3. Control	108	1.9	.7
	TOTAL	279	1.8	.7
12A	1. Experimental	79	2.0	.7
	2. Quasi-Control	87	1.9	.6
	3. Control	103	2.0	.6
	TOTAL	269	2.0	.6

TABLE 91

COMBINED GRADE POINT AVERAGE OF HIGH-POTENTIAL, LOW-ACHIEVING GROUPS IN THE FOUR SCHOOLS

FEMALE

Grade	Group	No.	Mean	S.D.
10B	1. Experimental	76	1.5	.4
	2. Quasi-Control	83	1.5	.4
	3. Control	69	1.6	.3
	TOTAL	228	1.5	.4
10A	1. Experimental	75	1.7	.5
	2. Quasi-Control	77	1.9	.6
	3. Control	65	1.9	.5
	TOTAL	217	1.8	.5
11B	1. Experimental	63	1.9	.6
	2. Quasi-Control	69	2.0	.7
	3. Control	58	1.8	.7
	TOTAL	190	1.9	.7
11A	1. Experimental	62	2.1	.6
	2. Quasi-Control	63	2.1	.6
	3. Control	56	2.0	.6
	TOTAL	181	2.1	.6
12B	1. Experimental	61	2.3	.7
	2. Quasi-Control	62	2.5	.6
	3. Control	54	2.2	.6
	TOTAL	177	2.3	.7
12A	1. Experimental	56	2.3	.6
	2. Quasi-Control	58	2.5	.4
	3. Control	51	2.4	.5
	TOTAL	165	2.4	.5

TABLE 92

GRADE POINT AVERAGE FOR AVERAGE ACHIEVERS AND HIGH ACHIEVERS

Grade	Sex	Average Achievers			High Achievers		
		No.	Mean	S.D.	No.	Mean	S.D.
10B	Male	247	2.4	.2	227	3.3	.3
	Female	241	2.4	.2	285	3.3	.3
10A	Male	246	2.4	.5	227	3.2	.5
	Female	235	2.5	.5	280	3.0	.5
11B	Male	236	2.3	.7	221	3.2	.5
	Female	217	2.6	.5	269	3.0	.5
11A	Male	229	2.4	.7	218	3.1	.6
	Female	213	2.5	.6	265	3.0	.6
12B	Male	221	2.5	.6	215	3.1	.5
	Female	212	2.8	.5	258	3.1	.5
12A	Male	218	2.6	.6	214	3.0	.6
	Female	199	2.7	.5	256	3.1	.5

C. Attrition

A substantial number of the high-potential, low-achieving students left the original school during the course of this study. One hundred fifty-one of the initial group of 585 were lost before time of graduation, either as dropouts or transfers to another school. This amounts to 25 per cent of these low-achieving students.

The more adequate achievers, on the other hand, are much more likely to remain in the original school. Eight hundred and eighty-seven of the 1,000 Average and High Achievers were still in the same school after three years. Here the loss is 11 per cent, less than half that of the Low Achievers. The low achiever is, therefore, much more likely to leave school before the time of graduation.

V. ANALYSIS OF TEACHER REACTION DATA

A questionnaire, designed to obtain teacher reaction to the project, was submitted to the involved teachers at the end of the first year of the experiment. Questionnaires were distributed to 247 teachers. Of these, 162 were returned in useable condition, a return of 66 per cent. The following data are based on these returns.

The questionnaire consisted of five questions which could be answered by checking _yes_ or _no_, and three general questions.[1] The responses in individual schools were quite similar. Each question will be analyzed separately.

Question #1: Did the identification and information cause you to take a special interest in these particular students?

Yes: 78% No: 22%

In the four schools, the returns indicate a _yes_ response of 78 per cent. This supports one of the fundamental assumptions of the study: this procedure created interest in the student who was described. Most frequently, the teachers stated that the information helped them to know the student better; to become more aware of him, his potential and his problems; to become interested in him as a person. "It made me want to know why he wasn't doing well," was a typical response. "I wanted to see if I could help."

Most of those who answered _no_ to this question stated that this procedure did not cause interest because the student had already come to their attention. They were aware of the underachievement and, in some cases, were working with the student before the booklet of information arrived. A few teachers stated that their heavy teaching load permitted no time for individual help, and some were unwilling to give special attention to anyone.

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[1] A copy of this instrument is contained in the Appendix.

Question #2: Do you feel that the information helped you to understand these students?

Yes: 62% No: 38%

Here the margin of yes votes was smaller, but about two out of three teachers indicated that the information helped them understand the student. Most frequently, the teachers felt that they knew the underachiever better; they had insight into his interests, attitudes, and problems. This enabled them to motivate the student or to discuss his work. "It showed me sensitive areas to avoid," was one comment. "I found I could be more sympathetic and understanding when I knew about him." Many teachers stressed the value of student information: "We should have this on all students." "The more information you have, the better."

Those who felt the information was not helpful were uniform in their reaction: they found the material too superficial. Knowing the student's hobbies, interests, favorite subjects, etc., does not explain why he is underachieving. The objection, therefore, was not so much to the information itself, but to what they considered its lack of depth.

Question #3: Did having the information cause you to treat these underachieving students differently than you ordinarily would have done?

Yes: 45% No: 55%

Here is an interesting result. Though most teachers stated that the information caused them to become interested in the student, less than half treated the student differently than they ordinarily would have. It appears that the teachers became aware of the high-potential low-achiever, they observed and diagnosed, but they took no unique action to help him.

Teachers who did make particular efforts to help the underachiever relied on personal attention. Aware of his ability, they sought to call forth greater effort, to motivate, to encourage. They called on him more often, checked his progress, praised his successes. They tried to be more accepting, more tolerant, more sympathetic to his problem. In very few cases did the teachers indicate that they gave the student additional help or had conferences with him or with members of his family.

Those who did not treat the experimental student differently (55 per cent of the teachers) appear to object to what seemed to them preferential treatment. "I am interested in all my students," they wrote, or, "I treat all equally and try to be fair." To select one malfunctioning student for special attention is perceived as unfair by some teachers. "You can't single out one person for special care." "Others in the class need help, too."

Again, teachers felt that limitations imposed by large class size and busy schedules made individual help impossible. A few others wanted to help but found the student unapproachable.

Question #4: Did you meet with the consultant during the semester?

Yes: 72%	No: 28%

Question #4A: Was the conference helpful to you?

Yes: 46%	No: 54%

In two of the four schools, the research worker attempted to meet with the involved teachers at least once each semester. His purpose was to assist the teachers in appraising individual students and to encourage them in their helping role. The consultant made himself available in a school and invited the teachers to come in at a convenient time. About two-thirds of the teachers were contacted.

The teacher replies indicate that the conference had limited usefulness. Slightly less than half of the teachers who were contacted felt the meeting was helpful to them. Those who found the conference of value stated that they gained a better idea of the purpose of the project, learned more about a particular student, or obtained suggestions for helping.

Those critical of the conference felt that the consultant could offer little additional information about the student. Further, the consultant did not provide specific techniques for helping. "He didn't have suggestions of how to help." "We didn't come to any conclusion."

The consultant was handicapped in his role, for he was not a counselor in the school and did not have contact with the students. He was unable to answer questions beyond the original data. What he attempted was to alert the teachers to the needs of the student, to encourage efforts to help, and to interpret the information which was available. The teachers would have welcomed additional insights or techniques that would produce change. As one teacher remarked, "The relationship between myself, the consultant, and the student was remote."

Question #5: Do you feel that this plan has value for helping underachieving students?

Yes: 66% No: 34%

About two out of three surveyed teachers found the procedure of this study of value. It drew attention to the malfunctioning student, made the teacher aware of his problem, and evoked efforts to motivate better work. The teacher was made cognizant of the student's ability, which often was not evident in his classroom performance.

Some of the approval of the plan was very faint praise: "It is better than nothing." "Any information helps." "All efforts to help students have value."

Those teachers who did not consider the plan valuable felt that it simply was not an adequate procedure. They expressed the conviction that it takes more than teacher interest and encouragement to redeem these students. Often the teacher had in fact tried to help, but the student had failed to respond. "It just didn't help." Some felt that such a program might be effective if begun earlier in the child's school career. Others find that lack of time and place for individual help is hampering.

Question #6: Do you have any techniques that seem to help underachievers?

In response to this question, about half the teachers wrote No. The others stress the importance of personal interest and rapport with the student, using such terms as encouragement, understanding, interest, praise, recognition, patience.

As far as actual techniques, the most common was to involve the student in the work of the class by calling on him frequently, assigning special projects or duties, directing the work toward his interests, and checking carefully on his daily preparation. Very few teachers mentioned individual conferences, parental contact, or special tutoring.

Question #7: How do you feel underachievers might be helped?

Here again the teachers relied heavily on personal attention and motivational techniques. Individual tutoring, supervision of after-school study, and parental contact are suggested. Some feel that help should start in earlier grades. Surprisingly, there was little mention of psychological help and counseling. Fewer yet mention case conferences, grouping in special classes, or techniques such as stricter control or more demand and challenge.

Question #8: Are there conditions that block being helpful at present?

Lastly, the teachers were asked whether or not they were able to carry out their ideas for helping underachievers. Overwhelmingly, the teachers felt that their efforts were handicapped by lack of time. Classes are too large; the number of students make individual attention impossible. The teacher schedule is heavy; there is no provision of time or space for working with students outside class. These conditions handicap those students who need extra help.

CHAPTER V

SUMMARY OF THE DATA

A summation of the data that were collected in the course of this experiment follows:

I. SUMMARY OF QUESTIONNAIRE DATA

These data were obtained from the responses of the 1,519 high-ability students to the questionnaire used in this study. The responses of low-achieving students were compared to the responses of average- and high-achieving students, and the results were analyzed statistically by the chi-square test.

There were significant differences in the responses of high- and low-achieving students to the following items:

A. In regard to sex, age, and place of birth, the low achiever...

#6 Is predominately male
#7 Is slightly older than his classmates (male)
#8 Is more often born outside Detroit (male)

B. In regard to home and family conditions, the low achiever...

#11 Is less likely to have a father engaged in professional work (male and female)
#11 Is less likely to have a father engaged in semi-professional or managerial work (male)
#11 Is more likely to have a father engaged in manual work (male)
#15 Is an only child or has three or more siblings (male)
#54 Considers parents more strict (female)
#55 Has arguments with parents about school (male and female)
#56 Reports parents use scolding and punishment (male)
#56 Reports parents have unreasonable expectations (female)
#56 Reports parents are critical of school progress (male and female)

- #57 Reports parents have been to school because of marks or behavior (male and female)
- #63 Has more problems with siblings (female)

C. In regard to interests and activities, the low achiever...

- #18 Is less interested in scholarly pursuits (male and female)
- #18 Is more interested in skills and hobbies (male)
- #20 Feels less talent for scholarship (male and female)
- #20 Feels more talent for mechanical work (male)
- #20 Feels more talent for creative arts (female)
- #21 Takes fewer music, art, or dance lessons (male and female)
- #23 Expects to own a car before graduation (male and female)
- #58 Feels superior at making friends (female)
- #59 Goes out more evenings (male and female)
- #61 Reports fewer problems making friends (male)
- #62 Dates more regularly (male and female)

D. In regard to school, the low achiever...

- #24 Participates less in school activities (male and female)
- #26 Prefers English and social studies (male and female)
- #27 Dislikes math and science (male and female)
- #29 Spends less time in daily study (male and female)
- #30 Spends less time in weekend study (male and female)
- #32 Has no definite study plan (male)
- #33 Finds it hard to concentrate (male and female)
- #35 Relates scholastic trouble to lack of study and poor study habits (male and female)
- #36 Gets along less well with teachers (male and female)
- #39 Feels handicapped by lack of interest in school (male)
- #40 Has been in trouble in school (male and female)
- #42 Feels teachers could be improved (female)

E. In regard to future plans, the low achiever...

- #43 Is less likely to be planning on college (male and female)
- #46 Hopes to go farther in school than the father went (male)
- #47 Is less likely to be planning on a profession (male)
- #48 Is less likely to see profession as eventual job (male)
- #49 Is not confident of reaching occupational goal (male)
- #50 Feels poor marks will block occupational goal (male and female)
- #51 Is less inclined to discuss future plans with parents (male)

F. In regard to health, the low achiever...

- #66 Is more likely to smoke (male and female)

G. In regard to self attitudes and concerns, the low achiever...

#69 Considers school a chief problem (male and female)
#70 Discusses problems less (female)
#72 Feels less satisfied with self (male)

The low-achieving young person describes himself by these responses. Skills and hobbies interest him more than scholarship. His talent is in working with his hands: mechanical work or creative arts. He is fond of social activities and considers himself adept at making friends. Compared to the high achiever, he goes out more often and dates more regularly. He is more likely to smoke, and he looks forward to owning an automobile.

But the most consistent pattern that emerges is an aversion to school. The high-potential low-achiever feels neither talent nor interest for scholarship. He spends less time in preparation. The low achiever finds it hard to concentrate and feels handicapped by poor study habits.

It is likely that there is a history of trouble in school. This student does not get on well with teachers, and he does not participate in school activities. His poor school work is the focus of conflict at home. The parents are critical of his progress; they scold and punish. They have probably been to the school to confer about the child's poor performance or behavior.

The low achiever overwhelmingly lists "school" as his chief problem. As a consequence of his school situation, he is less likely to be planning to attend college or to enter a profession. He lacks confidence in reaching a suitable occupational station. Finally, he has a lower self regard.

II. SUMMARY OF SELF CONCEPT DATA

The data relative to self concept were obtained from the Bills Index of Adjustment and Values. Comparison of mean scores attained by high- and low-achieving groups reveals the following:

A. The high achiever attained a higher mean score on every section of the Bills, indicating a more positive self regard. Not all these differences, however, were statistically meaningful. These were significantly different: male high-achieving students have a higher self ideal score, and female high-achieving students have a higher self concept and self attitude and a smaller discrepancy between self concept and ideal self.

B. Many of the trait words evoked significantly different responses. The male low achiever sees himself as less intelligent and less studious than the high achiever. He is less satisfied with himself in several qualities: alert, cheerful, honest, loyal, studious, and truthful. However, he is not striving to change. It is the high-achieving male who seeks perfection, whose self ideal rating shows that he wants to be more cooperative, courteous, friendly, honest, obedient, truthful, and understanding.

The female low achiever has a statistically lower self concept and self attitude. She rates herself lower in many traits: active, alert, dependable, helpful, neat, obedient, patient, quiet, studious. Her self ideal is like that of the high achiever, with one exception: the high achiever wishes to be more obedient.

Thus, high-achieving males and females perceive themselves as having desirable traits to a higher degree. Furthermore, their ideals are set higher. They seem anxious to acquire qualities which may be considered socially-approved or conforming.

The low achiever, on the other hand, has different attitudes. The boy is not so eager to be cooperative, courteous, understanding; the girl does not yearn to be considered obedient. These particular words point to important differences between these groups. They suggest that the low achiever is less docile, less tractable, less bent on pleasing the adult.

C. The Bills scores for the three groups of high-potential, low-achieving students showed no important differences from each other in the pre-test nor on the post-test at the conclusion of the experiment. Neither group gained over the other in self concept, as measured by this instrument

III. SUMMARY OF ACHIEVEMENT DATA

The data relative to achievement were obtained from the scores of high-achieving and low-achieving students on the Sequential Tests of Educational Progress (STEP) and the School and College Ability Tests (SCAT The analysis of these scores may be summarized as follows:

A. The students who were called "low-achieving" on the basis of a grade point average of 2.0 or lower might not be so designated if standardized tests were used as the criterion of achievement. The scores for these students cluster around the 75th percentile on each section of the STEP and are comparable to their ability quotient, as predicted by the SCAT. This is true of both the tenth grade and the twelfth grade scores.

B. Those students who were termed "average achievers" (GPA = 2.1-2.9 and "high achievers" (GPA = 3.0 or higher) obtain scores which are significantly higher than those of the low achievers on every section of both STEP and SCAT. Thus, the higher grades go to the more able students.

C. There were no appreciable differences in the tenth grade and twelfth grade STEP-SCAT scores (pre- and post-test) of any of the three groups of high-potential, low-achieving students. This suggests that no change occurred in the rate of learning of any group during the course of this experiment.

IV. SUMMARY OF GRADE POINT AVERAGE DATA

The data relative to grade point average were obtained from teacher-assigned marks collected from school records at the end of each half-year semester for the three years of the experiment. On the basis of these data, the following conclusions were drawn:

A. The mean GPA for the selected group of high-potential, low-achieving students for the first semester of the tenth grade was 1.5, which is midway between a "C" and a "D" average. This average increases slightly each semester, but this gain may be the result of attrition: substantial numbers of this population were lost through transfer or drop-out during the course of the experiment. The male low achievers completed the twelfth grade with a GPA of 2.0. The average for the female group was 2.4.

B. Those students termed average achievers earned a GPA of 2.4 for the first semester of the tenth grade; the high achievers earned 3.3. The subsequent GPA for these groups remained highly consistent during the three years of high school. It appears that the child's pattern of scholastic performance is established prior to his entrance into high school and tends to remain at about the same level.

C. None of the three groups of high-potential, low-achieving students attained a GPA significantly different from any other group during the course of the experiment. No group showed a change in achievement, as measured by earned marks.

V. SUMMARY OF TEACHER REACTION DATA

The data relative to teacher reaction to this project were obtained from responses to a questionnaire submitted to the involved teachers at the end of the first year of the experiment. The following conclusions were drawn:

A. The procedure of this experiment, supplying teachers with information about high-potential, low-achieving students, did create teacher interest in these students. Nearly four out of five teachers reported that they found the information useful in getting to know the student and in understanding him.

B. Despite their interest, however, more than half of the teachers report that they did not treat the selected students differently than they ordinarily would have done. The teacher became aware of the low-achieving student, was interested and curious, but did little to change him. Those that did try to help tended to use personal interest, friendliness, encouragement, or motivation by involvement.

C. There are several reasons why the low achievers were generally not given differential treatment. For one thing, teachers did not have techniques that would aid malfunctioning students; they were seeking suggestions and advice in this regard. Second, large classes and a busy schedule preclude the possibility of adequate individual attention. Lastly, some teachers report themselves averse to giving what seems to them unfair consideration to any student.

D. There is evidence that attempting to aid the low achiever may be a frustrating experience. If the teacher tries to establish a relationship and is rebuffed, hostility may be generated. In this case, the information may produce an effect on the pupil-teacher relationship which is opposite to the one intended.

VI. EFFECT OF THE EXPERIMENT

The purpose of this experiment was to assess the effects of supplying teachers with information about high-potential, low-achieving students. It was predicted that this information would change the pattern of interaction between the selected students and their teachers. Specifically, it was expected that the teacher would become interested in the student, would want to know more about him, and would try to help him to overcome his inability to function.

The research hypothesis was formulated as follows:

> Identifying a group of high-potential, low-achieving students and supplying information about them to their teachers will bring about student improvement in academic performance and in self feelings.

According to the data which were collected, this hypothesis was not confirmed:

A. The experimental group did not improve over the controls in achievement, as measured by STEP.

B. The experimental group did not improve over the controls in scholastic performance, as measured by GPA.

C. The experimental group did not improve over the controls in self feelings, as measured by the Bills IAV.

CHAPTER VI

CONCLUSIONS AND RECOMMENDATIONS

The data that were gathered through the procedures of this study lead to certain conclusions about the high-potential, low-achieving student.

I. THE SCHOOL AND THE UNDERACHIEVER

A. About one-third of the high-ability students (SCAT score above percentile 75) were found to be low-achieving by the definition of this research (GPA = 2.0 or lower).

B. If standardized test scores are used as a measure of achievement, these same students are not underachieving. They were found to score near the 75th percentile on every section of STEP in both the tenth and the twelfth grades, which is commensurate with their aptitude.

C. It appears, therefore, that these selected students are able and that growth and learning do occur. However, their classroom performance is unsatisfactory, and they fail to earn good grades. This points to the difference between learning, *per se*, and getting good marks.

D. Questionnaire and self concept data indicate that the high-potential, low-achieving student has personality and attitudinal characteristics which are different from those of the high achiever. Generally, the low achiever is less diligent, less conforming, less fond of schools and teachers.

E. Teacher reaction to the able, underachieving student tends to be negative. The attitudes of this student are unlike those of the teacher.

Teacher comments collected in this research were frequently derogatory--"lazy" was the most common epithet. The low achiever is subject to unfavorable comparison with the high achiever and is rejected, either openly or covertly.

II. THE PROBLEM OF CHANGE

A. The prognosis for improving the performance of the high-potential, low-achieving student is poor. The GPA for this group remained about the same for the three-year period of this study. At the same time, attrition is high. About 25 per cent of the original group was lost by dropout or transfer.

B. It appears, on the basis of GPA, self concept, and attitudinal data, that the low achiever's school performance is related to his basic personality structure. As such, underachievement is not a superficial phenomenon that may readily be changed.

C. Supplying teachers with information about students is probably a good guidance technique. It creates interest and helps the teacher to know and understand his pupils. But teacher interest is not force enough to produce personality change. Attempts to encourage, cajole, or demand better work from the underachiever probably have little effect and may create teacher frustration and hostility. Simple acceptance may be the best tactic.

III. RECOMMENDATIONS

There is one overwhelming conclusion that emerges from the evidence accumulated during this research: Because the pattern of personality which is manifested by the high-potential, low-achieving student does not produce the scholastic attitudes and behaviors that are preferred by teachers, his talents are largely wasted. He is intellectually able, and standardized tests demonstrate his learning. But his classroom performance brings him poor marks and makes school a largely negative experience for him.

It is evident, in a word, that the school is guilty of rejection toward a segment of our able youth by requiring that all must fit a prescribed mold or else be deemed failures. Previous research, focused on changing the underachiever, may have been aimed in the wrong direction. Even the term itself is inexact: he is not an underachiever; he is a non-performer. What he needs is an environment in which he will be able to use his abilities.

The chief recommendation of this study is this: It may be more feasible to change the classroom than to change the student. There is clear need for new techniques, techniques which will enable all children to learn despite individual differences in ability, personality, or social class background. Instead of condemning the underachiever and demanding that he change, the school should find a place for him. We must tailor the learning to the needs of the individual.

IV. NEED FOR FURTHER STUDY

Further study should be directed toward the specific problem of how the school can organize a curriculum to serve the so-called underachiever. Research in this area is virtually non-existent. There are at present several areas of promise that merit exploration and experimentation:

A. Inquiry needs to be directed into the area of cognition. Perhaps there are differences in the cognitive styles of high- and low-achieving persons, differences in the way they perceive, learn, experience. Evidence could help to shape a structure for the school learning experiences.

B. The non-directive classroom, as described by Whiteis,[1] looks like a promising teaching technique. By avoiding the traditional authoritarian role of the teacher, this method frees some students from the hampering effects of conflict and enables them to perform more adequately.

C. Teaching machines and programmed materials may be of particular value to the student who is unable to function in the traditional classroom. Experimentation in this area might disclose to what extent underachievement is a function of student-teacher interaction.

In short, traditional school procedures are alienating a significant portion of our able youth, and, as a result, society loses their potential contributions. The gifts of some young people need special conditions for optimum growth. To insist that all must conform to the pattern of teacher direction and control may be too rigid a philosophy.

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[1] Whiteis, op. cit.

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APPENDIXES

APPENDIX I

EDUCATIONAL QUESTIONNAIRE

1	2	3	4	5	6

Name____________________School________Counselor________ Do Not Write In This Space

Sex: M____F____ 7. Date of Birth____________Age_______ 7.____

8. Place of Birth____________________________________ 8.____

9. Father's Place of Birth_____________________________ 9.____

10. I live with: (1) Mother and Father____(2) Mother and Stepfather____(3)Father and Stepmother____(4) Mother Only____(5) Father Only____(6) Relatives____ (7) Guardian____(8) Other (Specify)________________ 10.____

11. Father's Occupation________________________________ 11.____

12. Is He Working At Present? (1) Yes____(2) No____ (3) Sometimes_____ 12.____

13. Is your mother employed? (1) Yes____(2) No____ 13.____

14. If so, what kind of job does she have?_________________ 14.____

15. Write the first name and the age of each of your brothers and sisters, starting with the oldest. Underline those not living in your home____ 15.____

16. Who else lives in your home?_________________________ 16.____

17. How many hours a week are you employed? (1) None____ (2) Less than 5____(3) 5-10____(4) 10-20____(5) More than 20 hours____ 17.____

18. What sort of things do you spend your time doing?____ 18.____

19. What things interest you a great deal?____ 19.____

20. What is your special talent; the thing you can do best?____ 20.____

21. Do you take lessons in any of these? (1) Music: Yes_____ No_____; (2) Dancing: Yes_____No_____; (3) Art: Yes_____ No_____

21._____

22. Do you own a car? (1) Yes_____(2) No_____

22._____

23. Do you expect to own a car before you graduate? (1) Yes_____(2) No_____

23._____

24. Do you participate in any school activities? If so, which ones? (Name Them) (1) Sports_____(2) Clubs_____ (3) Clerical Aid_____(4) Music_____(5) Speech_____ (6) Others____

24._____

25. Do you participate in any out-of-school activities? If so, name them: (1) Clubs_____(2) Church Groups_____ (3) J.A._____(4) Athletic Teams_____(5) Others__________

25._____

26. Subject I like best: (1) English_____(2) Social Studies_____(3) Mathematics_____(4) Science_____ (5) Language_____(6) Commercial_____(7) Shop_____(8) Art or Music_____(9) Other (specify)____________________

26._____

27. Subject I like least: (1) English_____(2) Social Studies_____(3) Mathematics_____(4) Science_____ (5) Language_____(6) Commercial_____(7) Shop_____(8) Art or Music_____(9) Other (specify)____________________

27._____

28. I have attended (how many) _____ different schools since the first grade.

28._____

29. On the average, about how much time do you spend studying at home each school day? (1) Less than 1 hour_____(2) 1-2 hours_____(3) 2-3 hours_____(4) More than 3 hours_____

29._____

30. About how much time do you spend studying on Saturday and Sunday? (1) Less than 1 hour_____(2) 1-2 hours_____ (3) 2-3 hours_____(4) 3-4 hours_____(5) 4-5 hours_____ (6) 5-6 hours_____(7) 6-7 hours_____(8) 7-8 hours_____ (9) more than 8 hours_____

30._____

Circle answers that apply to you:

31. I do, do not have a regular time for study.

31._____

32. I do, do not have a definite plan for studying.

32._____

33. It is, is not easy for me to concentrate.

33._____

34. Reading is, is not a problem to me.

34._____

35. What part of school life has caused you trouble or been a problem to you? (1) Subjects too easy____ (2) Subjects too difficult____ (3) Lack of ability____ (4) Lack of study____ (5) Lack of interest____ (6) Problems with teachers____ (7) Problems with other students____ (8) Poor study habits____ (9) Others (describe)________________
Explain why this has caused you trouble________________
____ 35.____

36. I usually get along with teachers: (1) Very well____ (2) Fairly well____ (3) Not very well____ 36.____

37. Have teachers sometimes helped you or taken a special interest in you? (1) Yes____ (2) No____. Explain why or why not________________________ 37.____

38. Do you ever go to them for help with school work? (1) Yes____ (2) No____ 38.____

39. Many students say they could do better in school than they are doing. What do you feel prevents you from getting higher marks?________________________ 39.____

40. Have you ever had trouble in school or been considered a problem? (1) Yes____ (2) No____ Why?________________
____ 40.____

41. I like this particular school: (1) Very well____ (2) Fairly well____ (3) Not very well____ 41.____

42. What could this school do to make it better?____________
____ 42.____

43. How far do you want to go in school? (1) I want to quit soon____ (2) Finish high school____ (3) Business or trade school____ (4) Technical school____ (5) Junior college____ (6) College____ (7) Other (describe)________________ 43.____

44. How far does your mother want you to go in school?________
____ 44.____

45. How far does your father want you to go in school?________
____ 45.____

46. Is this further than he went?________________________ 46.____

47. What do you think your first full-time job will be?________
____ 47.____

48. What job would you like to have ten years from now?________
____ 48.____

49. Do you feel confident of reaching this job? (1) Yes_____ (2) No_____ 49._____

50. Is there anything that you feel will keep you from getting this job? Explain:_____________________________ 50._____

51. Have you discussed your future plans with your parents?_____ 51._____

52. Do your parents agree with your plans? (1) Yes_____ (2) No_____ Explain:_____________________ 52._____

53. Have you discussed your future plans with your counselor?_____ 53._____

54. How strict are your parents? (1) Very strict_____ (2) Fairly strict_____ (3) Not very strict_____ (4) Not strict at all_____ 54._____

55. What causes arguments between you and your parents?_____________________________ 55._____

56. As far as school is concerned, do your parents usually: (1) Praise you_____ (2) Encourage you_____ (3) Help you_____ (4) Scold you_____ (5) Punish you_____ (6) Pay little attention_____ (7) Expect more than you can do_____ (8) Not know how you are doing_____ (9) Talk with teachers or counselor_____. Explain what they do:_____________________________ 56._____

57. Have your parents ever visited this school? (1) Yes_____ (2) No_____ Explain why_____________________ 57._____

58. I make friends and get along with people: (1) Better than others do_____ (2) About as well as others do_____ (3) Not as well as others do_____ 58._____

59. On the average, how many nights a week do you go out?_____ 59._____

60. Do your parents allow your friends to visit in your home? (1) Yes_____ (2) No_____ 60._____

61. Is there anything that has been a worry to you as far as making friends is concerned?_____________________________ 61._____

62. Which of the following applies to you? (1) I don't date_____ (2) I date occasionally_____ (3) I date regularly_____ (4) I go steady_____ 62._____

63. Are any of your brothers or sisters a problem to you?
(1) Yes____(2) No____. In what way?________________
______________________________________ 63.____

64. Do you have any physical disabilities or health problems?
(1) Yes____(2) No____Describe:________________
______________________________________ 64.____

65. Are you subject to: (1) Headaches____(2) Toothaches____
(3) Stomach trouble____(4) Nervousness____(5) Sleeplessness____(6) Eye trouble____(7) Hearing loss____
(8) Under or over weight____(9) Other (describe)________
______________________________________ 65.____

66. Do you smoke? (1) Yes____(2) No____ 66.____

67. Are you doing anything to improve your health?
Describe:________________________________ 67.____

68. Are you generally satisfied or dissatisfied with your height, weight, and physique? (1) Very satisfied____
(2) Fairly satisfied____(3) Not very satisfied____
(4) Very dissatisfied____. For what reason?__________
______________________________________ 68.____

69. What would you consider your chief problem at present?____
______________________________________ 69.____

70. With whom do you sometimes discuss your problems? (1) No one____(2) Mother____(3) Father____(4) Relative____
(5) Friend of same sex____(6) Friend of opposite sex____
(7) Teacher____(8) Counselor____(9) Other (specify)____
______________________________________ 70.____

71. If you had a severe problem, to whom would you go for help in solving it?________________________ 71.____

72. All things considered, how do you feel about yourself as a person? (1) Very satisfied____(2) Fairly satisfied____
(3) Not very satisfied____(4) Very dissatisfied____.
Please explain why you feel this way________________
______________________________________ 72.____

73. In the following space write anything you care to say or anything that you feel would be helpful in understanding you as a person: 73.____

APPENDIX II

TO THE TEACHER

This folder concerns members of your classes who are involved in a Guidance Department Research Project directed at high-potential, low-achieving students. To be included, students had to meet two criteria: (1) score in the top 25% on the 10B SCAT test, and (2) have a 10B grade point average of 2.0 (C) or less. The assumption is that one who scores in the top quartile on aptitude measures has good scholastic ability and is capable of the 3.0 (B) average necessary for college.

The Student Information Form contains personal data gathered from a questionnaire administered this term. It is subject to the usual limitations of a self-report: these are student responses; there is no assurance of completeness nor accuracy. However, frankness was encouraged, and the answers do provide insight into the way the person sees himself.

This information is confidential and should not be seen by anyone but you. The students were not told that you would be given access to what they wrote.

These personal facts are intended to provide clues helpful in the interpretation of the student's behavior, and to suggest courses of action which will encourage the student to overcome his academic deficiencies.

It is usually a mistake for the teacher to make direct reference to the student's personal problems, and this material should never be used to embarrass the child in front of his classmates.

Why are you being given this material? It is to help you know a particular student as an individual: to become aware of his attitudes and interests, his family, his future plans, his problems, and his potential. Because of his good ability and poor performance, he is in need of your guidance. There is evidence that the underachiever can be helped by a teacher who understands his problems, who sees him as an intelligent person with a need for special attention, and who will patiently work with him toward better achievement.

Since the information provided here is necessarily incomplete, add your own observations and anecdotes as the term progresses. In that way, the teacher next semester will have a more comprehensive portrait. Try to make your notes factual observations, not judgments.

This project will be of worth if we can succeed in helping some of these troubled youths to achieve more nearly proportionate to their potential.

APPENDIX III

STUDENT INFORMATION FORM

Name ____________________ School ____________________

School Ability ____________________ 10B Honor Point Average ____________

Place of Birth ____________________ Father's ____________________

Lives with ____________________ Others in Home ____________________

Father's Occupation ____________________ Mother's ____________________

Siblings ____________________ Position ____________________

Hobbies and Interests ____

Talents ____

School Activities ____

Other Activities ____

____

Subjects Liked Best ____________________ Least ____________________

Time Spent in Study ____

School Problems ____

____

Educational Goal ____________________ Occupational Goal ____________________

Comments ____

____

Relations to Parents ____

____

Health ____

____

Problems ____

____

____

APPENDIX IV

UNDERACHIEVING STUDENTS PROJECT

TEACHER QUESTIONNAIRE

To the Teacher:

Earlier this semester, you received information about certain underachieving students. Now we would like to know whether that information seemed to be useful to you as a teacher.

- -

1. Did the identification and information cause you to take a special interest in these particular students?
Yes__________No__________. Explain why______________________________
____
____

2. Do you feel that the information helped you to understand these students?
Yes__________No___________. Why or why not?_________________________
____
____

3. Did having the information cause you to treat these underachieving students differently than you ordinarily would have done?
Yes__________No__________. In what way?_____________________________
____
____

   Do you have any techniques that seem to help underachievers?________
____

4. Did you meet with Mr. Peterson during the semester? Yes_____No______
If Yes, was the conference helpful to you? Yes__________No__________
Why?____
____

   What kind of consultant help would be most useful in working with underachievers?____
____

5. Do you feel that this plan has value for helping underachieving students?
Yes__________No___________. Explain why you feel this way__________
____
____

6. How do you feel underachievers might be helped?______________________
____
____

   Are there conditions that block being helpful at present?___________
____
____

APPENDIX V

BILLS INDEX OF ADJUSTMENT AND VALUES

"SELF"

		I	II	III			I	II	III
a.	JOLLY	___	___	___	19.	kind	___	___	___
1.	active	___	___	___	20.	loyal	___	___	___
2.	alert	___	___	___	21.	neat	___	___	___
3.	carefree	___	___	___	22.	obedient	___	___	___
4.	cheerful	___	___	___	23.	patient	___	___	___
5.	considerate	___	___	___	24.	playful	___	___	___
6.	cooperative	___	___	___	25.	polite	___	___	___
7.	courteous	___	___	___	26.	quiet	___	___	___
8.	dependable	___	___	___	27.	sharing	___	___	___
9.	democratic	___	___	___	28.	sincere	___	___	___
10.	faithful	___	___	___	29.	studious	___	___	___
11.	friendly	___	___	___	30.	sociable	___	___	___
12.	generous	___	___	___	31.	tactful	___	___	___
13.	happy	___	___	___	32.	thoughtful	___	___	___
14.	helpful	___	___	___	33.	thrifty	___	___	___
15.	honest	___	___	___	34.	trustworthy	___	___	___
16.	humorous	___	___	___	35.	truthful	___	___	___
17.	intelligent	___	___	___	36.	understanding	___	___	___
18.	interesting	___	___	___	37.	unselfish	___	___	___

NAME________________ SCHOOL________________ COUNSELOR________________

BILLS INDEX OF ADJUSTMENT AND VALUES

"OTHERS"

	I	II	III		I	II	III
a. JOLLY	___	___	___	19. kind	___	___	___
1. active	___	___	___	20. loyal	___	___	___
2. alert	___	___	___	21. neat	___	___	___
3. carefree	___	___	___	22. obedient	___	___	___
4. cheerful	___	___	___	23. patient	___	___	___
5. considerate	___	___	___	24. playful	___	___	___
6. cooperative	___	___	___	25. polite	___	___	___
7. courteous	___	___	___	26. quiet	___	___	___
8. dependable	___	___	___	27. sharing	___	___	___
9. democratic	___	___	___	28. sincere	___	___	___
10. faithful	___	___	___	29. studious	___	___	___
11. friendly	___	___	___	30. sociable	___	___	___
12. generous	___	___	___	31. tactful	___	___	___
13. happy	___	___	___	32. thoughtful	___	___	___
14. helpful	___	___	___	33. thrifty	___	___	___
15. honest	___	___	___	34. trustworthy	___	___	___
16. humorous	___	___	___	35. truthful	___	___	___
17. intelligent	___	___	___	36. understanding	___	___	___
18. interesting	___	___	___	37. unselfish	___	___	___

NAME__________________ SCHOOL__________________ COUNSELOR__________________

APPENDIX VI

TABLE A1

CHI-SQUARE COMPARISON OF RESPONSE PATTERNS OF HIGH AND LOW ACHIEVERS TO ITEMS OF BILLS IAV:

MALE - SELF - COLUMN I

SELF CONCEPT

Trait Word	X^2	Trait Word	X^2
ACTIVE	1.0	LOYAL	.4
ALERT	4.7	NEAT	.6
CAREFREE	1.9	OBEDIENT	5.1
CHEERFUL	.3	PATIENT	.3
CONSIDERATE	1.7	PLAYFUL	1.8
COOPERATIVE	2.7	POLITE	2.0
COURTEOUS	3.5	QUIET	1.6
DEPENDABLE	1.6	SHARING	.6
DEMOCRATIC	.0	SINCERE	.6
FAITHFUL	.6	STUDIOUS	32.5***
FRIENDLY	1.5	SOCIABLE	.5
GENEROUS	.0	TACTFUL	.1
HAPPY	2.3	THOUGHTFUL	3.6
HELPFUL	.1	THRIFTY	.3
HONEST	4.5	TRUSTWORTHY	3.8
HUMOROUS	1.8	TRUTHFUL	4.4
INTELLIGENT	5.9*	UNDERSTANDING	4.1
INTERESTING	.3	UNSELFISH	.1
KIND	.6		

* Significant at .05 level

** Significant at .01 level

*** Significant at .001 level

TABLE A2

CHI-SQUARE COMPARISON OF RESPONSE PATTERNS OF HIGH AND LOW ACHIEVERS TO ITEMS OF BILLS IAV:

FEMALE - SELF - COLUMN I

SELF CONCEPT

Trait Word	X^2	Trait Word	X^2
ACTIVE	13.0***	LOYAL	.2
ALERT	6.6*	NEAT	12.9**
CAREFREE	.4	OBEDIENT	15.2***
CHEERFUL	1.4	PATIENT	9.6**
CONSIDERATE	2.5	PLAYFUL	1.9
COOPERATIVE	4.8	POLITE	1.6
COURTEOUS	2.6	QUIET	6.6*
DEPENDABLE	7.4*	SHARING	3.8
DEMOCRATIC	1.3	SINCERE	.0
FAITHFUL	1.4	STUDIOUS	29.0***
FRIENDLY	.9	SOCIABLE	2.2
GENEROUS	.5	TACTFUL	.3
HAPPY	3.3	THOUGHTFUL	.4
HELPFUL	10.0**	THRIFTY	1.2
HONEST	4.5	TRUSTWORTHY	3.3
HUMOROUS	1.0	TRUTHFUL	3.6
INTELLIGENT	3.4	UNDERSTANDING	1.3
INTERESTING	1.1	UNSELFISH	1.3
KIND	.1		

* Significant at .05 level

** Significant at .01 level

*** Significant at .001 level

TABLE A3

CHI-SQUARE COMPARISON OF RESPONSE PATTERNS OF HIGH AND LOW ACHIEVERS TO ITEMS OF BILLS IAV:

MALE - SELF - COLUMN II

SELF ATTITUDE

Trait Word	X^2	Trait Word	X^2
ACTIVE	1.1	LOYAL	6.5*
ALERT	15.5***	NEAT	1.0
CAREFREE	.6	OBEDIENT	2.7
CHEERFUL	7.1*	PATIENT	2.0
CONSIDERATE	.1	PLAYFUL	.7
COOPERATIVE	1.9	POLITE	1.9
COURTEOUS	.8	QUIET	1.2
DEPENDABLE	5.1	SHARING	.5
DEMOCRATIC	.7	SINCERE	1.7
FAITHFUL	.0	STUDIOUS	42.8***
FRIENDLY	2.1	SOCIABLE	.0
GENEROUS	4.8	TACTFUL	1.3
HAPPY	.0	THOUGHTFUL	5.1
HELPFUL	2.9	THRIFTY	4.4
HONEST	14.0***	TRUSTWORTHY	4.2
HUMOROUS	.3	TRUTHFUL	6.5*
INTELLIGENT	5.7	UNDERSTANDING	3.8
INTERESTING	.4	UNSELFISH	1.8
KIND	1.0		

* Significant at .05 level

** Significant at .01 level

*** Significant at .001 level

TABLE A4

CHI-SQUARE COMPARISON OF RESPONSE PATTERNS OF HIGH AND LOW ACHIEVERS TO ITEMS OF BILLS IAV:

FEMALE - SELF - COLUMN II

SELF ATTITUDE

Trait Word	X^2	Trait Word	X^2
ACTIVE	1.6	LOYAL	.2
ALERT	6.9*	NEAT	8.5*
CAREFREE	.0	OBEDIENT	4.9
CHEERFUL	.1	PATIENT	2.8
CONSIDERATE	2.8	PLAYFUL	1.3
COOPERATIVE	2.2	POLITE	.4
COURTEOUS	.0	QUIET	1.4
DEPENDABLE	5.4	SHARING	.0
DEMOCRATIC	.4	SINCERE	.4
FAITHFUL	.0	STUDIOUS	30.4***
FRIENDLY	1.9	SOCIABLE	1.2
GENEROUS	.8	TACTFUL	.0
HAPPY	3.5	THOUGHTFUL	2.0
HELPFUL	7.8*	THRIFTY	.3
HONEST	1.7	TRUSTWORTHY	4.0
HUMOROUS	.1	TRUTHFUL	3.7
INTELLIGENT	6.2*	UNDERSTANDING	.3
INTERESTING	.5	UNSELFISH	.5
KIND	1.6		

* Significant at .05 level

** Significant at .01 level

*** Significant at .001 level

TABLE A5

CHI-SQUARE COMPARISON OF RESPONSE PATTERNS OF HIGH AND LOW ACHIEVERS TO ITEMS OF BILLS IAV:

MALE - SELF - COLUMN III

SELF IDEAL

Trait Word	X^2	Trait Word	X^2
ACTIVE	.0	LOYAL	.7
ALERT	.7	NEAT	.9
CAREFREE	.0	OBEDIENT	7.3**
CHEERFUL	.2	PATIENT	1.6
CONSIDERATE	3.5	PLAYFUL	.0
COOPERATIVE	9.9**	POLITE	.3
COURTEOUS	7.4**	QUIET	2.7
DEPENDABLE	2.7	SHARING	1.2
DEMOCRATIC	1.6	SINCERE	.2
FAITHFUL	.7	STUDIOUS	.3
FRIENDLY	5.3*	SOCIABLE	1.3
GENEROUS	1.7	TACTFUL	.3
HAPPY	.6	THOUGHTFUL	1.4
HELPFUL	3.0	THRIFTY	4.5
HONEST	6.8**	TRUSTWORTHY	.6
HUMOROUS	.9	TRUTHFUL	5.9*
INTELLIGENT	.0	UNDERSTANDING	11.7***
INTERESTING	1.3	UNSELFISH	4.0
KIND	.3		

* Significant at .05 level

** Significant at .01 level

*** Significant at .001 level

TABLE A6

CHI-SQUARE COMPARISON OF RESPONSE PATTERNS OF HIGH AND LOW ACHIEVERS TO ITEMS OF BILLS IAV:

FEMALE - SELF - COLUMN III

SELF IDEAL

Trait Word	X^2	Trait Word	X^2
ACTIVE	1.6	LOYAL	.1
ALERT	.0	NEAT	3.6
CAREFREE	4.6	OBEDIENT	9.0*
CHEERFUL	.0	PATIENT	1.1
CONSIDERATE	1.9	PLAYFUL	1.6
COOPERATIVE	.9	POLITE	.0
COURTEOUS	.9	QUIET	4.8
DEPENDABLE	.6	SHARING	.9
DEMOCRATIC	.6	SINCERE	.6
FAITHFUL	.1	STUDIOUS	.4
FRIENDLY	2.4	SOCIABLE	2.2
GENEROUS	.2	TACTFUL	1.0
HAPPY	.5	THOUGHTFUL	1.8
HELPFUL	4.5	THRIFTY	2.8
HONEST	.9	TRUSTWORTHY	1.0
HUMOROUS	.9	TRUTHFUL	.5
INTELLIGENT	.1	UNDERSTANDING	1.0
INTERESTING	.3	UNSELFISH	1.7
KIND	2.2		

* Significant at .05 level

** Significant at .01 level

*** Significant at .001 level

TABLE A7

CHI-SQUARE COMPARISON OF RESPONSE PATTERNS OF HIGH AND LOW ACHIEVERS TO ITEMS OF BILLS IAV:

MALE - OTHERS - COLUMN I

PEER SELF CONCEPT

Trait Word	X^2	Trait Word	X^2
ACTIVE	5.9*	LOYAL	2.4
ALERT	3.2	NEAT	.0
CAREFREE	.1	OBEDIENT	.6
CHEERFUL	4.6	PATIENT	.2
CONSIDERATE	.4	PLAYFUL	5.4
COOPERATIVE	.8	POLITE	.7
COURTEOUS	1.2	QUIET	6.0*
DEPENDABLE	2.3	SHARING	4.2
DEMOCRATIC	1.0	SINCERE	.5
FAITHFUL	6.0*	STUDIOUS	1.9
FRIENDLY	2.4	SOCIABLE	.4
GENEROUS	.9	TACTFUL	.5
HAPPY	1.3	THOUGHTFUL	.6
HELPFUL	.1	THRIFTY	.9
HONEST	.9	TRUSTWORTHY	.0
HUMOROUS	5.8	TRUTHFUL	2.8
INTELLIGENT	3.4	UNDERSTANDING	1.5
INTERESTING	2.8	UNSELFISH	3.9
KIND	2.3		

* Significant at .05 level

** Significant at .01 level

*** Significant at .001 level

TABLE A8

CHI-SQUARE COMPARISON OF RESPONSE PATTERNS OF HIGH AND LOW ACHIEVERS TO ITEMS OF BILLS IAV:

FEMALE - OTHERS - COLUMN I

PEER SELF CONCEPT

Trait Word	X^2	Trait Word	X^2
ACTIVE	1.1	LOYAL	3.4
ALERT	1.3	NEAT	1.0
CAREFREE	4.2	OBEDIENT	4.2
CHEERFUL	.2	PATIENT	.4
CONSIDERATE	.1	PLAYFUL	.1
COOPERATIVE	8.8*	POLITE	.9
COURTEOUS	1.2	QUIET	.3
DEPENDABLE	1.3	SHARING	2.7
DEMOCRATIC	1.4	SINCERE	4.3
FAITHFUL	1.7	STUDIOUS	1.0
FRIENDLY	1.0	SOCIABLE	1.0
GENEROUS	1.4	TACTFUL	.9
HAPPY	.2	THOUGHTFUL	2.4
HELPFUL	.9	THRIFTY	1.8
HONEST	.2	TRUSTWORTHY	2.6
HUMOROUS	2.5	TRUTHFUL	.9
INTELLIGENT	1.4	UNDERSTANDING	.2
INTERESTING	1.0	UNSELFISH	2.5
KIND	.4		

* Significant at .05 level

** Significant at .01 level

*** Significant at .001 level

TABLE A9

CHI-SQUARE COMPARISON OF RESPONSE PATTERNS OF HIGH AND LOW ACHIEVERS TO ITEMS OF BILLS IAV:

MALE - OTHERS - COLUMN II

PEER SELF ATTITUDE

Trait Word	X^2	Trait Word	X^2
ACTIVE	.3	LOYAL	2.9
ALERT	1.7	NEAT	1.8
CAREFREE	2.6	OBEDIENT	.8
CHEERFUL	.3	PATIENT	.6
CONSIDERATE	.0	PLAYFUL	2.2
COOPERATIVE	2.4	POLITE	.9
COURTEOUS	2.8	QUIET	9.3**
DEPENDABLE	2.5	SHARING	.4
DEMOCRATIC	.1	SINCERE	.2
FAITHFUL	1.0	STUDIOUS	.1
FRIENDLY	2.9	SOCIABLE	2.3
GENEROUS	10.7**	TACTFUL	.5
HAPPY	1.1	THOUGHTFUL	2.2
HELPFUL	2.7	THRIFTY	4.1
HONEST	.4	TRUSTWORTHY	.0
HUMOROUS	1.3	TRUTHFUL	4.6
INTELLIGENT	.0	UNDERSTANDING	.6
INTERESTING	1.7	UNSELFISH	.9
KIND	.5		

* Significant at .05 level

** Significant at .01 level

*** Significant at .001 level

TABLE A10

CHI-SQUARE COMPARISON OF RESPONSE PATTERNS OF HIGH AND LOW ACHIEVERS TO ITEMS OF BILLS IAV:

FEMALE - OTHERS - COLUMN II

PEER SELF ATTITUDE

Trait Word	X^2	Trait Word	X^2
ACTIVE	.2	LOYAL	.1
ALERT	.0	NEAT	1.6
CAREFREE	4.7	OBEDIENT	.1
CHEERFUL	.9	PATIENT	.0
CONSIDERATE	.3	PLAYFUL	.1
COOPERATIVE	.3	POLITE	.9
COURTEOUS	.0	QUIET	1.1
DEPENDABLE	2.5	SHARING	.7
DEMOCRATIC	1.4	SINCERE	.7
FAITHFUL	10.0**	STUDIOUS	.5
FRIENDLY	1.1	SOCIABLE	1.5
GENEROUS	2.1	TACTFUL	1.5
HAPPY	.6	THOUGHTFUL	1.2
HELPFUL	2.5	THRIFTY	3.7
HONEST	2.3	TRUSTWORTHY	1.8
HUMOROUS	2.5	TRUTHFUL	1.0
INTELLIGENT	1.4	UNDERSTANDING	.1
INTERESTING	3.3	UNSELFISH	4.7
KIND	.5		

* Significant at .05 level

** Significant at .01 level

*** Significant at .001 level

TABLE A11

CHI-SQUARE COMPARISON OF RESPONSE PATTERNS OF HIGH AND LOW ACHIEVERS TO ITEMS OF BILLS IAV:

MALE - OTHERS - COLUMN III

PEER SELF IDEAL

Trait Word	X^2	Trait Word	X^2
ACTIVE	2.7	LOYAL	.9
ALERT	.7	NEAT	.6
CAREFREE	2.0	OBEDIENT	.0
CHEERFUL	1.1	PATIENT	.1
CONSIDERATE	.2	PLAYFUL	.1
COOPERATIVE	3.3	POLITE	.8
COURTEOUS	2.0	QUIET	1.2
DEPENDABLE	1.0	SHARING	2.3
DEMOCRATIC	.0	SINCERE	.3
FAITHFUL	.9	STUDIOUS	1.6
FRIENDLY	.0	SOCIABLE	.3
GENEROUS	2.1	TACTFUL	.0
HAPPY	.0	THOUGHTFUL	1.1
HELPFUL	.2	THRIFTY	.1
HONEST	1.0	TRUSTWORTHY	1.3
HUMOROUS	.6	TRUTHFUL	.3
INTELLIGENT	1.5	UNDERSTANDING	.1
INTERESTING	1.5	UNSELFISH	.6
KIND	3.2		

* Significant at .05 level

** Significant at .01 level

*** Significant at .001 level

TABLE A12

CHI-SQUARE COMPARISON OF RESPONSE PATTERNS OF HIGH AND LOW ACHIEVERS TO ITEMS OF BILLS IAV:

FEMALE - OTHERS - COLUMN III

PEER SELF IDEAL

Trait Word	X^2	Trait Word	X^2
ACTIVE	.9	LOYAL	.4
ALERT	.8	NEAT	1.1
CAREFREE	1.5	OBEDIENT	2.1
CHEERFUL	.3	PATIENT	.8
CONSIDERATE	.7	PLAYFUL	.1
COOPERATIVE	.2	POLITE	8.7*
COURTEOUS	1.5	QUIET	.4
DEPENDABLE	6.6*	SHARING	.8
DEMOCRATIC	.1	SINCERE	5.2
FAITHFUL	1.3	STUDIOUS	.0
FRIENDLY	4.9*	SOCIABLE	4.5
GENEROUS	.5	TACTFUL	1.4
HAPPY	.0	THOUGHTFUL	1.7
HELPFUL	1.8	THRIFTY	4.6
HONEST	.6	TRUSTWORTHY	2.6
HUMOROUS	.5	TRUTHFUL	.3
INTELLIGENT	.1	UNDERSTANDING	.3
INTERESTING	4.2	UNSELFISH	2.5
KIND	3.4		

* Significant at .05 level

** Significant at .01 level

*** Significant at .001 level

APPENDIX VII

TABLE A13

GRADE POINT AVERAGES OF THREE GROUPS OF HIGH-POTENTIAL, LOW-ACHIEVING STUDENTS IN FOUR SCHOOLS:

SCHOOL A - MALE

Grade	Group	No.	Mean	S.D.
10B	1. Experimental	33	1.5	.3
	2. Quasi-Control	35	1.5	.4
	3. Control	37	1.4	.4
10A	1. Experimental	33	1.9	.6
	2. Quasi-Control	33	1.8	.5
	3. Control	35	1.7	.6
11B	1. Experimental	29	1.8	.6
	2. Quasi-Control	32	1.8	.5
	3. Control	32	1.8	.5
11A	1. Experimental	24	1.9	.6
	2. Quasi-Control	29	1.9	.5
	3. Control	32	1.8	.7
12B	1. Experimental	24	1.9	.5
	2. Quasi-Control	29	2.0	.5
	3. Control	28	1.8	.6
12A	1. Experimental	22	2.0	.8
	2. Quasi-Control	29	2.0	.5
	3. Control	28	2.0	.6

TABLE A14

GRADE POINT AVERAGES OF THREE GROUPS OF HIGH-POTENTIAL, LOW-ACHIEVING STUDENTS IN FOUR SCHOOLS:

SCHOOL A - FEMALE

Grade	Group	No.	Mean	S.D.
10B	1. Experimental	15	1.6	.3
	2. Quasi-Control	14	1.6	.3
	3. Control	14	1.7	.2
10A	1. Experimental	14	1.8	.6
	2. Quasi-Control	13	2.0	.3
	3. Control	10	1.9	.5
11B	1. Experimental	10	1.7	.5
	2. Quasi-Control	11	2.0	.5
	3. Control	9	2.3	.6
11A	1. Experimental	10	2.0	.6
	2. Quasi-Control	9	2.2	.6
	3. Control	9	2.1	.5
12B	1. Experimental	10	2.2	.5
	2. Quasi-Control	9	2.5	.4
	3. Control	8	2.0	.4
12A	1. Experimental	10	1.9	.5
	2. Quasi-Control	9	2.5	.4
	3. Control	8	2.2	.4

TABLE A15

GRADE POINT AVERAGES OF THREE GROUPS OF HIGH-POTENTIAL, LOW-ACHIEVING STUDENTS IN FOUR SCHOOLS:

SCHOOL B - MALE

Grade	Group	No.	Mean	S.D.
10B	1. Experimental	21	1.5	.4
	2. Quasi-Control	19	1.2	.4
	3. Control	21	1.5	.4
10A	1. Experimental	21	1.8	.5
	2. Quasi-Control	19	1.4	.4
	3. Control	21	1.8	.7
11B	1. Experimental	17	1.5	.8
	2. Quasi-Control	17	1.5	.6
	3. Control	21	1.8	.6
11A	1. Experimental	15	1.6	.8
	2. Quasi-Control	17	1.6	.7
	3. Control	20	1.8	.7
12B	1. Experimental	12	1.6	.9
	2. Quasi-Control	15	1.8	.6
	3. Control	18	2.0	.5
12A	1. Experimental	11	2.3	.7
	2. Quasi-Control	15	2.2	.5
	3. Control	18	2.0	.5

TABLE A16

GRADE POINT AVERAGES OF THREE GROUPS OF HIGH-POTENTIAL, LOW-ACHIEVING STUDENTS IN FOUR SCHOOLS:

SCHOOL B - FEMALE

Grade	Group	No.	Mean	S.D.
10B	1. Experimental	13	1.5	.3
	2. Quasi-Control	15	1.6	.3
	3. Control	13	1.7	.2
10A	1. Experimental	13	1.8	.4
	2. Quasi-Control	15	1.9	.6
	3. Control	13	1.8	.3
11B	1. Experimental	10	1.8	.6
	2. Quasi-Control	14	2.1	.4
	3. Control	11	1.6	.8
11A	1. Experimental	9	1.8	.6
	2. Quasi-Control	14	2.1	.6
	3. Control	11	1.7	.7
12B	1. Experimental	8	2.0	.4
	2. Quasi-Control	14	2.3	.4
	3. Control	11	2.2	.5
12A	1. Experimental	7	2.2	.4
	2. Quasi-Control	14	2.7	.3
	3. Control	10	2.6	.4

TABLE A17

GRADE POINT AVERAGES OF THREE GROUPS OF HIGH-POTENTIAL, LOW-ACHIEVING STUDENTS IN FOUR SCHOOLS:

SCHOOL C - MALE

Grade	Group	No.	Mean	S.D.
10B	1. Experimental	34	1.4	.5
	2. Quasi-Control	31	1.3	.6
	3. Control	38	1.3	.5
10A	1. Experimental	34	1.6	.7
	2. Quasi-Control	29	1.4	.8
	3. Control	36	1.6	.6
11B	1. Experimental	28	1.8	.5
	2. Quasi-Control	23	1.5	.7
	3. Control	34	1.7	.7
11A	1. Experimental	27	1.9	.6
	2. Quasi-Control	21	1.5	.8
	3. Control	33	1.9	.7
12B	1. Experimental	25	2.1	.8
	2. Quasi-Control	20	1.8	.7
	3. Control	30	2.0	.7
12A	1. Experimental	24	2.2	.8
	2. Quasi-Control	20	1.7	.8
	3. Control	27	2.1	.6

TABLE A18

GRADE POINT AVERAGES OF THREE GROUPS OF HIGH-POTENTIAL, LOW-ACHIEVING STUDENTS IN FOUR SCHOOLS:

SCHOOL C - FEMALE

Grade	Group	No.	Mean	S.D.
10B	1. Experimental	29	1.6	.4
	2. Quasi-Control	34	1.4	.5
	3. Control	27	1.5	.3
10A	1. Experimental	29	1.7	.5
	2. Quasi-Control	30	2.0	.7
	3. Control	27	1.8	.5
11B	1. Experimental	25	2.0	.7
	2. Quasi-Control	26	2.1	.8
	3. Control	26	1.8	.6
11A	1. Experimental	25	2.1	.6
	2. Quasi-Control	24	2.3	.6
	3. Control	24	2.0	.5
12B	1. Experimental	25	2.4	.8
	2. Quasi-Control	24	2.7	.7
	3. Control	23	2.1	.6
12A	1. Experimental	23	2.4	.6
	2. Quasi-Control	21	2.5	.4
	3. Control	22	2.3	.5

TABLE A19

GRADE POINT AVERAGES OF THREE GROUPS OF HIGH-POTENTIAL, LOW-ACHIEVING STUDENTS IN FOUR SCHOOLS:

SCHOOL D - MALE

Grade	Group	No.	Mean	S.D.
10B	1. Experimental	27	1.4	.5
	2. Quasi-Control	28	1.4	.5
	3. Control	33	1.3	.3
10A	1. Experimental	26	1.5	.6
	2. Quasi-Control	28	1.5	.5
	3. Control	33	1.5	.6
11B	1. Experimental	24	1.5	.5
	2. Quasi-Control	26	1.3	.8
	3. Control	33	1.4	.8
11A	1. Experimental	23	1.5	.5
	2. Quasi-Control	25	1.8	.6
	3. Control	32	1.8	.7
12B	1. Experimental	22	1.4	.6
	2. Quasi-Control	24	1.7	.7
	3. Control	32	1.8	.7
12A	1. Experimental	22	1.6	.5
	2. Quasi-Control	23	1.9	.7
	3. Control	30	1.9	.6

TABLE A20

GRADE POINT AVERAGES OF THREE GROUPS OF HIGH-POTENTIAL, LOW-ACHIEVING STUDENTS IN FOUR SCHOOLS:

SCHOOL D - FEMALE

Grade	Group	No.	Mean	S.D.
10B	1. Experimental	19	1.4	.5
	2. Quasi-Control	20	1.4	.4
	3. Control	15	1.5	.4
10A	1. Experimental	19	1.7	.6
	2. Quasi-Control	19	1.6	.6
	3. Control	15	2.1	.6
11B	1. Experimental	18	1.9	.5
	2. Quasi-Control	18	1.7	.6
	3. Control	12	1.7	.6
11A	1. Experimental	18	2.1	.6
	2. Quasi-Control	16	1.9	.6
	3. Control	12	2.2	.7
12B	1. Experimental	18	2.3	.9
	2. Quasi-Control	15	2.3	.6
	3. Control	12	2.4	.7
12A	1. Experimental	16	2.3	.6
	2. Quasi-Control	14	2.3	.5
	3. Control	11	2.4	.7